

137/185

```

1
1/1
CCG GTA ACG CCG CGT CCC AGT GCT ATC CGT CCG CCG GAC CCG CCG AAA CAT CAG CCG CCG
pro val thr pro arg pro ser ala ile arg pro pro asp arg pro lys his gln arg arg
61/21
CCG CCC CCG TCG GCC GCG GCC GCG CTC GAC CCG CTC CAC CTC GCC ATC AGC GAC CAG GTT
ala pro arg ser ala ala ala gly leu asp pro leu his leu ala ile ser asp gln val
121/41
ATC GAG GTG GAA GCG GAC GGT GTT GCG ATG CAC GCG CAA CTT GCC GCG GAT CCG GCG GAT
ile glu val glu ala asp gly val gly met his ala glo leu ala gly asp arg gly asp
181/61
GCT CAT CCG AAC CCG CGA CCG ACA CAA TGC CCG CAG CAC CCG ACG ACG GCG CCC CAC CCG
ala his arg asn pro arg arg thr gln cys pro gln his arg thr thr ala pro his arg
241/81
CTC TTG CAG TGA CTT GAT GAT GAC ACT CAC CCG CAT AAG GCT CGT CCG CTC GCG CTC AGC
leu leu gln opa pro asp asp asp thr his pro his lys ala arg arg leu arg leu ser
301/101
AAT GCA GTA AGT TTA CAC AAA CCG ACT TGT AAA AAC CTC GCG AGG TGG GGT CTA TGG CCA
asn ala val ser leu his lys arg thr cys lys asn leu arg arg trp gly leu trp pro
361/121
ACA AAC GTG GCA ATG CCG GCG AGC CTC TGC CCT TGT CCG ATC
thr asn val ala met pro gly ser leu cys pro cys arg ile

```

SEQ ID N° 42B

FIGURE 42B

```

1/1
CCG TAA CCG CCG GTC CCA GTG CTA TCC GTC CCG CCG ACC GCG CGA AAC ATC AGC CCG CCG
arg och arg arg val pro val leu ser val arg arg thr ala arg asn ile ser gly gly
61/21
CGC CCC GGT CCG CCG CCG CCG GCG TCG ACC CCG TCC ACC TGG CCA TCA GCG ACC AGG TTA
arg pro gly arg pro arg pro gly ser thr arg ser thr trp pro ser ala thr arg leu
121/41
TCG AGG TGG AAG CCG ACG GTG TTG GGA TGC ACG CCC AAC TTG CCG GCG ATC GCG GCG ATG
ser arg trp lys arg thr val leu gly cys thr pro asn leu pro ala ile ala ala met
181/61
CTC ATC GGA ACC CCG GAC GCA CAC AAT GCC CCG AGC ACC GCA CGA CCG CCG CCC ACC GCG
leu ile gly thr arg asp ala his asn ala arg ser thr ala arg arg arg pro thr gly
241/81
TCT TGC AGT GAC CTC ATG ATG ACA CTC ACC CCC ATA AGG CTC CTC GCG TGC GCG TGA GCA
ser cys ser asp leu met met thr leu thr pro ile arg leu val gly cys ala opa ala
301/101
ATG CAG TAA GTT TAC ACA AAC GGA CTT GTA AAA ACC TGC GGA GGT CCG CTC TAT GCG CAA
met gln och val tyr thr asn gly leu val lys thr cys gly gly gly val tyr gly gln
361/121
CAA ACG TGG CAA TGC CCG GCA GCG TCT GCC CTT CTC GGA TC
gln thr trp gln cys arg ala ala ser ala leu val gly

```

SEQ ID N° 42C

FIGURE 42C

FEUILLE DE REMPLACEMENT (REGLE 26)

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Séquence codante Rv2622 prédite par Cole et al., 1998 (Nature 393:537-544) et contenant seq42A:

```

1/1                               31/11
atg gcc aac aaa cgt ggc aat gcc ggg cag cct ctg ccc ttg tgg gat cga gac gac gac
Met ala asn lys arg gly asn ala gly gln pro leu pro leu ser asp arg asp asp asp
61/21                               91/31
cac atg cag ggg cac tgg ctg ctg gcc cgg ctg ggc aag cgg gtg ctg cgt ccc ggc ggc
his met gln gly his trp leu leu ala arg leu gly lys arg val leu arg pro gly gly
121/41                               151/51
gtc gaa ctc acc cgg aca ctg ctg gcc cgc gcc gag gtg acc gac gcc gac gtg ctc gag
val glu leu thr arg thr leu leu ala arg ala glu val thr asp ala asp val leu glu
181/61                               211/71
ctg gca ccg ggc ctg ggc cgc acc gca gcc gaa atc ttg gcc cgc aac ccg cgg tgg tac
leu ala pro gly leu gly arg thr ala ala glu ile leu ala arg asn pro arg ser tyr
241/81                               271/91
gtg ggg gcg gag agc gat ccc aac gcg gcc aac atg gtc cga cac gtt ctc gcc ggc cgc
val gly ala glu ser asp pro asn ala ala asn leu val arg his val leu ala gly arg
301/101                               331/111
ggc gac gtc cgg gtc acc gac gcg gcc gat aac gga cta tcc gac gcc agc gcc gat gtc
gly asp val arg val thr asp ala ala asp thr gly leu ser asp ala ser ala asp val
361/121                               391/131
gtc atc gcc gag gcg atg ctg acc atg caa ggc aac gcg gct aaa cac acg atc gtc gcc
val ile gly glu ala met leu thr met gln gly asn ala ala lys his thr ile val ala
421/141                               451/151
gag gcg gcg cgg gtg ctg agg ccg ggt gcc cgc tac gcg att cac gaa cta gag ctg gtg
glu ala ala arg val leu arg pro gly gly arg tyr ala ile his glu leu ala leu val
481/161                               511/171
ccg gac gac gtc gca gag cag gtc cgc acc gac ctg cgg cag tgg ctg gcc cgc gcg ctc
pro asp asp val ala glu gln val arg thr asp leu arg gln ser leu ala arg ala leu
541/181                               571/191
aag gtc aat gcg cgt ccg ctg acc gtt gcg gaa tgg tgg cac ctc tta gcg gcc cat gga
lys val asn ala arg pro leu thr val ala glu trp ser his leu leu ala gly his gly
601/201                               631/211
ctg gtc gtc gaa cac gtt gtc acc gct tcc atg gcg ttg tta caa ccg cga cgg gtg atc
leu val val glu his val val thr ala ser met ala leu leu gln pro arg arg val ile
661/221                               691/231
gct gac gaa gcc ctc ctg ggt gcg ctg cgg ttc gcc gga aac ctg ctc atc cat cgt gcc
ala asp glu gly leu leu gly ala leu arg phe ala gly asn leu leu ile his arg ala
721/241                               751/251
gcg cgt cgg cga gtc ctg ttg atg cgc cac aca ttc cgc agg cat cgt gaa cgc ttg acc
ala arg arg arg val leu leu met arg his thr phe arg arg his arg glu arg leu thr
781/261                               811/271
gcc gtc gcc att gtc gcg cac aaa ccg cac gtc gat tgg tga
ala val ala ile val ala his lys pro his val asp ser cpa

```

SEQ ID N° 42D

FIGURE 42D

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ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv2622

```

1/1                               31/11
taa aaa cct gag gag gtg ggg tct arg gcc aac aaa cgt ggc aat gcc ggg cag cct ctg
OCN lys pro ala glu val gly ser met ala asn lys arg gly asn ala gly gln pro leu
61/21                               91/31
ccc ttg tgg gat cga gac gac gac cac atg cag ggg cac tgg ctg ctg gcc ggg ctg ggc
pro leu ser asp arg asp asp asp his met gln gly his trp leu leu ala arg leu gly
121/41                               151/51
aag cgg gtg ctg cgt ccc ggc ggc gtc gaa ctc acc cgg aca ctg ctg gcc ggc gcc gag
lys arg val leu arg pro gly gly val glu leu thr arg thr leu leu ala arg ala glu
181/61                               211/71
gtg acc gac gcc gac gtg ctc gag ctg gta ccg gcc ctg ggc cgc acc gca gcc gaa atc
val thr asp ala asp val leu glu leu ala pro gly leu gly arg thr ala ala glu ile
241/81                               271/91
ttg gcc cgc aac ccg cgg tgg tac gtg ggg ggg gag aga gat ccc aac gcg gcc aac ctg
leu ala arg asn pro arg ser tyr val gly ala glu ser asp pro asn ala ala asn leu
301/101                               331/111
gtc cga cac gtt ctc gcc gcc cgc ggc gac gtc cgg gta acc gac gcg gcc gat acc gga
val arg his val leu ala gly arg gly asp val arg val thr asp ala ala asp thr gly
361/121                               391/131
tta tcc gac gcc aga gcc gat gtc gtc atc ggc gag gcg atg ctg acc atg caa gcc aac
leu ser asp ala ser ala asp val val ile gly glu ala met leu thr met gln gly asn
421/141                               451/151
ggc gct aaa cac aag atc gtc gcc gag gcg gcg cgg gtg ctg agg ccg ggt ggc cgc tac
ala ala lys his thr ile val ala glu ala ala arg val leu arg pro gly gly arg tyr
481/161                               511/171
ggc att cac gaa cta gcg ctg gtg ccg gac gac gtc gca gag cag gtc cgc acc gac ctg
ala ile his glu leu ala leu val pro asp asp val ala glu gln val arg thr asp leu
541/181                               571/191
cgg cag tgg ctg gcc cgc gcg ctc aag gtc aat gcg cgt ccg ctg acc gtt gcg gaa tgg
arg gln ser leu ala arg ala leu lys val asn ala arg pro leu thr val ala glu trp
601/201                               631/211
tgg cac ctc tta gcg ggc cat gga ctg gtc gtc gaa cac gtt gtc acc gct tcc atg gcg
ser his leu leu ala gly his gly leu val val glu his val val thr ala ser met ala
661/221                               691/231
ttg tta caa ccg cga cgg gtg atc gct gac gaa ggc ctc ctg ggt gcg ctg cgg ttc gcc
leu leu gln pro arg arg val ile ala asp glu gly leu leu gly ala leu arg phe ala
721/241                               751/251
gga aac ctg ctc atc cat cgt gcc gcg cgt cgg cga gtc ctg ttg atg cgc cac aca ttc
gly asn leu leu ile his arg ala ala arg arg arg val leu leu met arg his thr phe
781/261                               811/271
cgc agg cat cgt gaa cgc ttg aca gcc gtc gcc att gtc gcg cac aaa ccg cac gtc gat
arg arg his arg glu arg leu thr ala val ala ile val ala his lys pro his val asp
841/281
tgg tga
ser CCA

```

SEQ ID N° 42F

FIGURE 42F

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```

1/1                               31/11
atc ggc cgt gac atc gat gac cag ggt cgg ctg tct ctg gac gtc ggc ggt cga acg gta
ile ala arg asp ile asp asp gln gly arg leu cys leu asp val gly gly arg thr val
61/21                               91/31
gtt gtt tca ggc ggc gac gtg gtg cat ttg cgt taa ctc gcg cgg agc tgg cgt ccc caa
val val ser ala gly asp val val his leu arg OCH leu ala arg ser trp arg pro gln
121/41                               151/51
aag att aag gtc ggc ggc atg agc tat ccg gag aat gtc ctg gcc gct ggc gag cag gtc
lys ile lys val ala gly met ser tyr pro glu asn val leu ala ala gly glu gln val
181/61                               211/71
gtt ctg cac cgc cat cgc cac tgg aat cgc tta atc tgg ccc gtc gtg gtg ctg gtc ttg
val leu his arg his pro his trp aan arg leu ile trp pro val val val leu val leu
241/81                               271/91
ctg acc ggc ttg ggc ggc stc ggc tcc gga ttc gtc aac tgg aca cct tgg cag cag atc
leu thr gly leu ala ala phe gly ser gly phe val asn ser thr pro trp gln gln ile

```

SEQ ID N° 43A

FIGURE 43A

```

1/1                               31/11
tcg cgc gtg aca tcg atg acc agg gtc ggc tgt gtc tgg acg tcg ggc gtc gaa cgg tag
ser arg val thr ser met thr arg val gly cys val trp thr ser ala val glu arg ANS
61/21                               91/31
ttg ttt cag cgg ggc acg tgg tgc att tgc gtt aac tcg cgc gga gct ggc gtc ccc aaa
leu phe gln arg ala thr trp cys ile cys val asn ser arg gly ala gly val pro lys
121/41                               151/51
aga tta agt tcg cgg gca tga gct atc cgg aga atg tcc tgg ccg ctg gag agc agg tag
arg leu arg ser arg ala OPA ala ile arg arg met ser trp pro leu ala ser arg ser
181/61                               211/71
tcc tgc acc gcc atc cgc act gga atc gct taa tct ggc ccg tcg tgg tgc tgg tct tgc
phe cys thr ala ile arg thr gly ile ala OCH ser gly pro ser trp cys trp ser cys
241/81                               271/91
tga ccg ggt tgg cgg cgt tcg ggt ccg gat tcg tca act cga cac ctt ggc agc aga tc
OPA pro gly trp arg arg ser gly pro asp ser ser thr arg his leu gly ser arg

```

SEQ ID N° 43B

FIGURE 43B

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```

1/1                               31/11
cgc gcg tga cat cga tga cca ggg tgg gct gtg tct gga cgt cgg cgg tgg aac ggt agt
arg ala opa his arg opa pro gly ser ala val ser gly arg arg arg ser aen gly ser
61/21                               91/31
tgt ttc agc ggg cga cgt ggt gca ttt gag tta act cgc gcg gag ctg gcg tcc cca aaa
cys phe ser gly arg arg gly ala phe ala leu thr arg ala glu leu ala ser pro lys
121/41                               151/51
gat taa ggt cgc ggg cat gag cta tcc gga gaa tgt cct gcc cgc tgg cga gca ggt cgt
asp ocn gly arg gly his glu leu ser gly glu cys pro gly arg trp arg ala gly arg
181/61                               211/71
tct gca ccg cca tcc gca ctg gaa tgg att aat ctg gaa cgt cgt ggt gct gcc att gct
ser ala pro pro ser ala leu glu ser leu aen leu ala arg arg gly ala gly leu ala
241/81                               271/91
gac cgg gtc gcc ggc ggt cgg gtc cgg att cgc caa ctg gac acc ttg gca gca gat c
asp arg val gly gly val arg val arg ile arg glu leu asp thr leu ala ala asp

```

SEQ ID N° 43C

FIGURE 43C

Séquence codante Rv3278c prédite par Cole et al., 1998 (Nature 393:537-544) et contenant seq43A:

```

1/1                               31/11
atg agc tat ccg gag aat gtc ctg gcc gct gcc gag cag gtc gtc ctg caa cgc cat cag
Met ser tyr pro glu aen val leu ala ala gly glu gin val val leu his arg his pro
61/21                               91/31
cac tgg aat cgc tta atc tgg ccc gtc gtg gtc ctg gtc ttg ctg acc ggg ttg gcg gcg
his trp aen arg leu ile trp pro val val val leu leu thr gly leu ala ala
121/41                               151/51
ttc ggg tcc gga ttc gtc aac tgg aca cct tgg cag cag atc gct aag aac gtg att cac
phe gly ser gly phe val aen ser thr pro trp gin gin ile ala lys aen val ile his
181/61                               211/71
gcg gtc atc tgg ggg atc tgg ttg gtg atc gtc gcc tgg ctg acg ctg tgg cca ttc ctg
ala val ile trp gly ile trp leu val ile val gly trp leu thr leu trp pro phe leu
241/81                               271/91
agg tgg ctg acc aca cat ttc gtg gtg acc aac cgg cgg gtg atg ttc cgg cat ggt gag
ser trp leu thr thr his phe val val thr aen arg arg val met phe arg his gly val
301/101                               331/111
ctg acc cgc agc ggg atc gac ata ccg cta gca cgg atc aac agc gag gag ttc cgg gac
leu thr arg ser gly ile asp ile pro leu ala arg ile aen ser val glu phe arg asp
361/121                               391/131
cgg atc ttc gag cgg att ttt cgc acc ggg acc ttg att atc gag tcc gcc tca caa gat
arg ile phe glu arg ile phe arg thr gly thr leu ile ile glu ser ala ser glu asp
421/141                               451/151
ccg ctg gag ttc tac aac att ccg agc ctg cgg gag gtg cat gcg ttg ctg tat cac gag
pro leu glu phe tyr aen ile pro arg leu arg glu val his ala leu leu tyr his glu
481/161                               511/171
gtt ttc gac acc ctg ggc tcc gac gag tgg ccc agc tga
val phe asp thr leu gly ser asp glu ser pro ser opa

```

SEQ ID N° 43D

FIGURE 43D

FEUILLE DE REMPLACEMENT (REGLE 26)

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ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv3276c

```

1/1                               31/31
taa ctc gag cgg agc tgg cgt ccc caa aag att aag gtc gag ggc atg agc tat ccg gag
OCH leu ala arg ser trp arg pro gln lys ile lys val ala gly met ser tyr pro glu
61/21                               91/31
aat gtc ctg gcc gct gcc gag cag gtc gtt ctg cac cgc cat ccg cac tgg aat cgc tta
asn val leu ala ala gly glu gln val val leu his arg his pro his trp asn arg leu
121/41                               151/51
atc tgg ccc gtc gtg gtg ctg gtc ttg ctg acc gag tgg gag gag ttc ggg tcc gga ttc
ile trp pro val val val leu val leu leu thr gly leu ala ala phe gly ser gly phe
181/61                               211/71
gln aac tgg aca cat tgg cag cag atc gct aag aac gtg att cac gcc gtc atc tgg gag
val asn ser thr pro trp gln gln ile ala lys asn val ile his ala val ile trp gly
241/81                               271/91
atc tgg ttg gtg atc gtc gcc tgg ctg acg ctg tgg cca ttc ctg agc tgg ctg acc aca
ile trp leu val ile val gly trp leu thr leu trp pro phe leu ser trp leu thr thr
301/101                               331/111
cat ttc gtg gtg acc aac cgg cgg gtg atg ttc cgg cat ggt gtg ctg acc cgc agc ggg
his phe val val thr asn arg arg val met phe arg his gly val leu thr arg ser gly
361/121                               391/131
atc gac ata ccg cta gca cgg atc aac agc gtg gag ttc cgg gac cgg atc ttc gag cgg
ile asp ile pro leu ala arg ile asn ser val glu phe arg asp arg ile phe glu arg
421/141                               451/151
att ttt cgc acc ggg acg ctg att atc gag tcc gag tca caa gat ccg ctg gag ttc tac
ile phe arg thr gly thr leu ile ile glu ser ala ser gln asp pro leu glu phe tyr
481/161                               511/171
aac att ccg cgc ctg cgg gag gtg cat gag tgg ctg tat cac gag gtt ttc gac acc ctg
asn ile pro arg leu arg glu val his ala leu leu tyr his glu val phe asp thr leu
541/181
ggc tcc gac gag tgg ccc agc tga
gly ser asp glu ser pro ser CPA

```

SEQ ID N° 43F

FIGURE 43F

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```

1/1                               31/11
gcc aag atg gat gtc tac caa cgc acc gcc gcc gcc tgg cag ccg ctc aag acc ggt atc
ala lys met asp val tyr gln arg thr ala ala gly trp gln pro leu lys thr gly ile
61/21                               31/31
acc acc cat atc ggt tgg gcg gcc atg gcc ccg gaa gcc aag agc gga tat ccg gcc act
thr thr his ile gly ser ala gly met ala pro glu ala lys ser gly tyr pro ala thr
121/41                               151/51
ccg atg ggg gtt tac agc ctg gac too gct ttt gcc acc gcc ccg aat ccc ggt gcc ggg
pro met gly val tyr ser leu asp ser ala phe gly thr ala pro asn pro gly gly gly
181/61                               211/71
ttg ccg tat acc caa gtc gga ccc aat cac tgg tgg agt gcc gac gac aat agc ccc acc
leu pro tyr thr gln val gly pro asn his trp trp ser gly asp asp asn ser pro thr
241/81                               271/91
ttt aac too atg cag gtc tgt cag aag tcc cag tgc ccg ttc agc acg gcc gac agc gag
phe asn ser met gln val cys gln lys ser gln cys pro phe ser thr ala asp ser glu
301/101                               331/111
acc ctg caa atc ccg cag tac aag cat tgg gtc gtc atg gcc gtc aac aag gcc aag gtc
asn leu gln ile pro gln tyr lys his ser val val met gly val asn lys ala lys val
361/121                               391/131
cca gcc aaa gcc tcc gcc ttc ttc ttt ccc acc acc gac gcc ggg ccc acc gcc ggt tgt
pro gly lys gly ser ala phe phe phe his thr thr asp gly gly pro thr ala gly cys
421/141
gtg gcc atc
val ala ile

```

SEQ ID N° 44A

FIGURE 44A

```

1/1                               31/11
cca aga tgg atg tct acc aac gca ccg ccg ccg gct gcc agc ccg tca aga ccg gta tca
pro arg trp met ser thr asn ala pro pro pro ala gly ser arg ser arg pro val ser
61/21                               91/31
cca ccc ata tgg gtt ccg ccg gca tgg cgc cgg aag cca aga gcc gat atc ccg cca ctc
pro pro ile ser val arg arg ala trp arg arg lys pro arg ala asp ile arg pro leu
121/41                               151/51
cga tgg ggg ttt aca gcc tgg act ccg ctt tgg gca ccg ccg cga atc ccg gtc gcc ggt
arg trp gly phe thr ala trp thr pro leu leu ala pro arg arg ile pro val ala gly
181/61                               211/71
tgc cgt ata ccc aag tgg gac cca atc act ggt gga gtc gcc agc cca ata gcc cca cct
cys arg ile pro lys ser asp pro ile thr gly gly val ala thr thr ile ala pro pro
241/81                               271/91
cta act cca tgc agg tct gtc aga agt ccc agt gcc cgt tca gca cgg ccg aca gcc aga
leu thr pro cys arg ser val arg ser pro ser ala arg ser ala arg pro thr ala arg
301/101                               331/111
acc tgc aaa tcc cgc agt aca agc att ccg tgg tga tgg gcc tca aca agg cca agg too
thr cys lys ser arg ser thr ser ile arg ser cpa trp ala ser thr arg pro arg ser
361/121                               391/131
cag gca aag gct ccg cgt tct tct ttc aca cca ccg acc gcc gcc cca ccg ccg gtt gtc
gln ala lys ala pro arg ser ser phe thr pro pro thr ala gly pro pro arg val val
421/141
tgg cga tc
trp arg

```

SEQ ID N° 44B

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 44B

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1/1
 caa gat gga tgt cta cca aag cae cgc cgc cgg ctg gca gac gct caa gac cgg tat cac
 gln asp gly cys leu pro thr his arg arg arg leu ala ala ala gln asp arg tyr his
 81/21
 cac cca tat cgg ttc ggc ggg cat ggc gcc gga agc caa gag cgg ata tcc ggc cae tcc
 his pro tyr arg phe gly gly his gly ala gly ser gln glu arg ile ser gly his ser
 121/41
 gat ggg ggt tta cag cct gga ctr cgc ttt tgg cae cgc gcc gaa tcc cgg tgg cgg gtr
 asp gly gly leu gln pro gly leu arg phe trp his arg ala glu ser arg trp arg val
 181/61
 gcc gta tac cca agt cgg acc caa tca ctg gtg gag tgg cga cga caa tag ccc cac ctr
 ala val tyr pro ser arg thr gln ser leu val glu trp arg arg gln AMS pro his leu
 241/81
 caa ctc cat gca ggt ctg tca gaa gtc cca ctg ccc gtt cag cae ggc cga cag cga gaa
 OCH leu his ala gly leu ser glu val pro val pro val gln his gly arg gln arg glu
 301/101
 cct gca aat ccc gca gta caa gca ttc ggt cgt gat ggg cgt caa caa gcc caa ggt ccc
 pro ala asn pro ala val gln ala phe gly arg asp gly arg gln gln gly gln gly pro
 361/121
 agg caa agg ctc cgc gtt ctt att tca cac cae cga cgg cgg gcc cae cgc ggg ttg tgt
 arg gln arg leu arg val leu leu ser his his arg arg arg ala his arg gly leu cys
 421/141
 gcc gat c
 gly asp

SEQ ID N° 44C

FIGURE 44C

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Séquence codante Rv0309 prédite par Cole et al., 1998 (Nature 393:537-544) et contenant Séq44A:

```

1/1                               31/11
atg agc cga ctc cta gct ttg ctg tgc gct ggc gta tgc acg ggc tgc gtc gct gtg gtc
Met ser arg leu leu ala leu leu cys ala ala val cys thr gly cys val ala val val
61/21                               91/31
ctc gcg cca gtg agc atg gcc gtc gtc aac ccg tgg ttc ggc aac tcg gtc gcc aat gcc
leu ala pro val ser leu ala val val aas pro trp phe ala aas ser val gly aas ala
121/41                               151/51
act cag gtg gtc tcg gtg gtg gga acc gcc ggt tcg acg gcc aag atg gat gtc tac caa
thr gln val val ser val val gly thr gly gly ser thr ala lys met asp val tyr gln
181/61                               211/71
cgc acc gcc gcc gcc tgg cag ccg ctc aag acc ggt acc acc acc cat atc ggt tcg gcg
arg thr ala ala gly trp gln pro leu lys thr gly ile thr thr his ile gly ser ala
241/81                               271/91
ggc atg gcg ccg gaa gcc aag agc gga tat ccg gcc act ccg atg ggc ggt tac agc cag
gly met ala pro glu ala lys ser gly tyr pro ala thr pro met gly val tyr ser leu
301/101                               331/111
gac tcc gct ttt gcc acc gcg ccg aat ccc ggt gcc ggc tgg ccg tat acc caa gtc gga
asp ser ala phe gly thr ala pro aas pro gly gly gly leu pro tyr thr gln val gly
361/121                               391/131
ccc aat cac tgg tgg agt gcc gac gac aat agc ccc acc ttt aac tcc acg cag gtc tgt
pro aas his trp trp ser gly asp asp aas ser pro thr phe aas ser met gln val cys
421/141                               451/151
cag aag tcc cag tgc ccg ttc agc acg gcc gac agc gag aac cag caa atc ccg cag tac
gln lys ser gln cys pro phe ser thr ala asp ser glu aas leu gln ile pro gln tyr
481/161                               511/171
aag cat tcg gtc gtg atg gcc gtc aac aag gcc aag gtc cca gcc aaa gcc tcc gcc ttc
lys his ser val val met gly val aas lys ala lys val pro gly lys gly ser ala phe
541/181                               571/191
ttc ttt cac acc acc gac gcc ggc ccc acc gcc ggt tgt gtc gcg atc gac gat gcc acc
phe phe his thr thr asp gly gly pro thr ala gly cys val ala ile asp asp ala thr
601/201                               631/211
ctg gtg cag atc atc cgt tgg ctg ccg cct gcc gcg gtg atc gcg atc gcc aag tas
leu val gln ile ile arg trp leu arg pro gly ala val ile ala ile ala lys OCH

```

SEQ ID N° 44D

FIGURE 44D

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ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv0309

```

1/1                               31/11
tga gag atg agc cga ctc cta gct ttg ctg tgc gct gag gta tgc acc ggc tgc gtc gct
CPA ala met ser arg leu leu ala leu leu cys ala ala val cys thr gly cys val ala
61/21                               91/31
gtg gtt ctc gag cca gtg agc ctg gcc gtc gtc aac ccg tgg ttc gag aac tcg gtc ggc
val val leu ala pro val ser leu ala val val asn pro trp phe ala asn ser val gly
121/41                               151/51
aat gcc act cag gtg gtt tcg gtg gtg gga acc gcc ggt tcg acg gcc aag atg gat gtc
asn ala thr gln val val ser val val gly thr gly gly ser thr ala lys met asp val
161/61                               211/71
tac caa cgc acc gcc gcc gcc tgg cag ccg ctg aag acc ggt atc acc acc caa atc ggt
tyr gln arg thr ala ala gly trp gln pro leu lys thr gly ile thr thr his ala gly
241/81                               271/91
tcg gag gcc atg gng ccg gaa gcc aag agc gga tat ccg gcc act ccg atg ggg gtt tac
ser ala gly met ala pro glu ala lys ser gly tyr pro ala thr pro met gly val tyr
301/101                               331/111
agc ctg gac tcc ggt ttt gcc acc gng ccg aat acc ggt gcc ggg ttg ccg tat acc caa
ser leu asp ser ala phe gly thr ala pro asn pro gly gly gly leu pro tyr thr gln
361/121                               391/131
gtc gga ccc aat cac tgg tgg agt ggc gac gac aat agc ccc acc ttt aac tcc atg ccg
val gly pro asn his trp trp ser gly asp asp asn ser pro thr phe asn ser met gln
421/141                               451/151
gtc tct cag aag tcc cag tgc ccg ttc agc acg gcc gac agc gag aac ctg caa atc ccg
val cys gln lys ser gln cys pro phe ser thr ala asp ser glu asn leu gln ile pro
481/161                               511/171
cag tac aag cat tcg gtc gtg atg gcc gtc aac aag gcc aag gtc cca gcc aac gcc tcc
gln tyr lys his ser val val met gly val asn lys ala lys val pro gly lys gly ser
541/181                               571/191
ggg ttc ttc ttt cac acc acc gac gcc ggg ccc acc gcc ggt tgt gtg gag atc gac gat
ala phe phe phe his thr thr asp gly gly pro thr ala gly cys val ala ile asp asp
601/201                               631/211
gcc acg ctg gtg cag atc atc cgt tgg ctg ccg acc ggt gcc gtg atc gag atc gcc aag
ala thr leu val gln ile ile arg trp leu arg pro gly ala val ile ala ile ala lys
661/221
taa
OCH

```

SEQ ID N° 44F

FIGURE 44F

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Fragment cloné en fusion avec phoA

```

1/1                               31/31
gat atc ccc gga cac cag gtc atc cgg cga gat ggt gat cga ggc tcg gac ccg cag gca
asp leu pro gly his gln val ile arg arg asp gly asp arg gly ser asp pro gln ala
61/21                               91/31
ccc ggt agc cag agg cac cag cat cag cca cat cgc gat ggc cag cat gcc gcg ccg tcg
ser gly ser gln arg his gln his gln gln his arg asp gly gln his ala ala pro ser
121/41                               151/51
ggt acr tgc cac tcg cga tcc ttg gga tga cgg tgg ggc ata gct agc gcg cac cag gtc
gly pro cys his ser arg ser leu gly CFA arg trp gly ile ala ser ala his gln val
181/61                               211/71
atc gtg cca gac cgg gca tgc cgc gtc ggc aag ctg tcg ggc gcg ggt tag agc ggt agc
ile val pro asp arg ala cys arg val gly lys leu ser gly ala gly AMB ser gly ser
241/81                               271/91
gtg cga ccc agg atg gcg aat gct cgg ggg tca ccg gcg aag tgg tag ccg ccg atg atg
val arg pro arg met ala asn ala arg gly ser pro ala lys trp AMB pro arg met met
301/101                               331/111
tcg gtg aag ccc aac cgg cgg tac aac cgc cac gcc cga ttg tcc tca ccg ttg gtc tcc
ser val lys pro asn arg arg tyr asn arg his ala arg leu ser ser pro leu val ser
361/121                               391/131
ggt gtg gag agc agg acg ttg tcc tcg tcg cga ccg gct agc agt cgg ccg gcc aac gcc
gly val glu ser arg thr leu ser ser ser arg pro ala ser ser arg arg ala asn ala
421/141                               451/151
tcc ccg agg cca cgg cct tga gcg cgg gga agg atg tgc aat tca gtc aac tcg aag tag
ser pro arg pro arg pro CFA ala arg gly arg met cys asn ser val asn ser lys AMB
481/161                               511/171
ctg gtc atc agt cgg gcg atc gct agc cgc gga aag ccg ctg cgt tgc aag ccc agt acc
leu val ile ser arg ala ile ala arg arg gly lys pro leu arg cys lys pro ser thr
541/181                               571/191
acc tgc tgt tgc cac cac tgg ccg ggc gcc ccg gga tag ccg tac gcc act ccg agc att
thr cys cys cys his his trp pro gly ala pro gly AMB pro tyr ala thr pro ser ile
601/201                               631/211
ggc gcg ttg ctg agt tcg gcg gcc gac gcc agc gcc gtg gtg tcg gcg gcc tcg gcc tgc
gly ala leu leu ser ser ala ala asp gly ser ala val val ser ala ala ser ala cys
661/221                               691/231
tcg gct gcc gtt acc tcg acg gcc gcg acc gcc tgc cag ccg cgc cgc cgg atg tgc tcc
ser ala ala val thr ser thr ala ala thr ala cys gln pro arg arg arg met cys ser
721/241                               751/251
agc cac att ggg gcg cgc aaa gtc tcg gtg ccc ctg ggg tag cgc atc gcc tcg aca tac
ser his ile gly ala arg lys val ser val pro leu gly AMB arg ile ala ser thr tyr
781/261                               811/271
acc gtc agg gca tca ccg agg cgg cgc tcc ata tcg ctg gcc gcc aga tcg atg agg aat
thr val arg ala ser pro arg arg arg ser ile ser leu gly gly arg ser met arg asn
841/281                               871/291
atc gcc aac gcg cgg tgt cct cct cat gtg atg aac cga tgc gtc ctt gcg cac cag tat
ile ala asn ala arg cys pro pro his val met asn arg cys val leu ala his gln tyr
901/301                               931/311
cgg acc agc cga tga gcc cgc ccg cgc tgg acg ggg ctt gta gcg tac gcc cgt ttc cgc
arg thr ser arg CFA gly arg pro arg trp thr gly leu val ala tyr gly arg phe arg

```

SEQ ID N° 452A

FIGURE 452A

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```

961/321
taa gct cgt cgc tgc ggc gcc gcc ggg ata gaa tgc acc gcg aac cag tgg tac ggc gca
ser ala arg arg cys gly ala ala gly ile glu ser pro ala asn gln trp tyr gly ala
1021/341
gat tga cct cgt atc atc tga gtt agt tgc ccg cgc aat ggg cat ccg cgt gtt atc ggt
asp opa pro arg ile ile opa val ser cys pro arg asn gly his pro arg val ile gly
1081/361
att acg tga cag tct gtc gcc aag gag gga cgc atg cca ctg tcc gat cat gag cag ccg
ile thr opa gln ser val gly lys glu gly arg met pro leu ser asp his glu gln arg
1141/381
atg ctt gac cag atc gag agc gct ctg tac gcc gaa gat ccc aag ttc gca tgc agt gtc
met leu asp gln ile glu ser ala leu tyr ala glu asp pro lys phe ala ser ser val
1201/401
cgt gcc ggg ggc ttc cgt gca ccg acc gcg ccg ccg cgc ctg cag gcc gcc gcc ttg ttc
arg gly gly gly phe arg ala pro thr ala arg arg arg leu gln gly ala ala leu phe
1261/421
atc atc ggt ctg ggg atg ttg gtt tcc gcc ctg gcc ttc aaa gag acc atg atc gga agt
ile ile gly leu gly met leu val ser gly val ala phe lys glu thr met ile gly ser
1321/441
ttc ccg ata ctg agc gtt ttc ggt ttt gtc gtg atg ttc ggt ggt gtg gtc tat gcc atc
phe pro ile leu ser val phe gly phe val val met phe gly gly val val tyr ala ile
1381/461
acc ggt cct cgg ttg tcc gcc agc atg gat cgt gcc gga tgc gct gct ggg gct tgc cgc
thr gly pro arg leu ser gly arg met asp arg gly gly ser ala ala gly ala ser arg
1441/481
cag cgt cgt acc aag ggg gcc ggg gcc tca ttc acc agc cgt atg gaa gat c
gln arg arg thr lys gly ala gly gly ser phe thr ser arg met glu asp

```

SEQ ID N° 452A (suite)

FIGURE 452A (suite)

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fragment seq452A en décalage moins 1 pour la phase de lecture

```

1/1                               31/11
atc tcc ccg gac acc agg tca tcc ggc gag atg gtg atc gag gct cgg acc cgc agg cat
ile ser pro asp thr arg ser ser gly glu met val ile glu ala arg thr arg arg his
61/21                               91/31
ccg gta gcc aga gcc acc agc atc agc aac atc ggc atg gcc agc atg ccg cgc cgt cgg
pro val ala arg gly thr ser ile ser asn ile ala met ala ser met pro arg arg arg
121/41                               151/51
gtc ctt gcc act cgc gat cct tgg gat gac ggt ggg gca tag cta ggc cgc acc agg tca
val leu ala thr arg asp pro trp asp asp gly gly ala AMS leu ala arg thr arg ser
181/61                               211/71
tcg tgc cag acc ggg cat gcc ggc tgc gca agc tgt cgg ggc cgg gtt aga gcc gta gcc
ser cys gln thr gly his ala ala ser ala ser cys arg ala arg val arg ala val ala
241/81                               271/91
tgc gac cca gga tgg cga atg ctc ggg ggt cac cgg cga agt ggt agc cga gga tga tgt
cys asp pro gly trp arg met leu gly gly his arg arg ser gly ser arg gly OFA cys
301/101                               331/111
cgg tga agc cca acc gcc ggt aca acc gcc acg ccc gat tgt cct cac cgt tgg tct ccg
arg OFA ser pro thr gly gly thr thr ala thr pro asp cys pro his arg trp ser pro
361/121                               391/131
gtg tgg aga gca gga cgt tgt cct cgt cgc gac cgg cta gca gtc ggc ggg cca acg cct
val trp arg ala gly arg cys pro arg arg asp arg leu ala val gly gly pro thr pro
421/141                               451/151
ccc cga gcc cac gcc ctt gag cgc ggg gaa gga tgt gca att cag tca act cga agt agc
pro arg gly his gly leu glu arg gly glu gly cys ala ile gln ser thr arg ser ser
481/161                               511/171
tgg tca tca gtc ggg cga tgc cta ggc ggc gaa agc cgc tgc gtt gca agc cca gta cca
trp ser ser val gly arg ser leu gly ala glu ser arg cys val ala ser pro val pro
541/181                               571/191
cct gct gtt gcc acc acc gcc cgg ggc ccc cgg gat agc cgt acg cca ctc cga gca ttg
pro ala val ala thr thr gly arg ala pro arg asp ser arg thr pro leu arg ala leu
601/201                               631/211
ggg cgt tgc tca gtt cgg cgg ccg acg gca gcc ccg tgg tgt cgg cgg cct cgg cct gct
ala arg cys ser val arg arg pro thr ala ala pro trp cys arg atg pro arg pro val
661/221                               691/231
cgg atg ccg tta cct cga cgg ccg cga ccc cca gcc agc cgc gcc gcc gga tgt gct cca
arg leu pro leu pro arg acg pro arg pro pro ala ser arg ala ala gly cys ala pro
721/241                               751/251
gcc aca ttg ggg cgc gca aag tct cgg tgc ccc tgg ggt agc gca tgc cgt cga cat aca
ala thr leu gly arg ala lys ser arg cys pro trp gly ser ala ser arg arg his thr
781/261                               811/271
ccg tca ggg cat caa cga gcc gcc gct cca tat cgc tgg ggc gca gat cga tga gga ata
pro ser gly his his arg gly gly ala pro tyr arg trp ala ala asp arg OFA gly ile
841/281                               871/291
tcg cca acg cgc ggt gtc ctc ctc atg tga tga acc gat gcc tgc ttg cgc acc agt atc
ser pro thr arg gly val leu leu met OFA OFA thr asp ala cys leu arg thr ser ile
901/301                               931/311
gga caa gcc gat gag gcc gcc cgc gct gga cgg gcc ttg tag cgt atg gcc gtt tcc gct
gly gln ala asp gln ala ala arg ala gly arg gly leu AMS arg met ala val ser ala
961/321                               991/331
cag ctc gtc ggt gcc gcc ccg ccg gga tag aat cgn ccg cga acc agt ggt arg gcc cag
gln leu val ala ala ala pro pro gly AMS aac arg pro arg thr ser gly thr ala gln

```

SEQ ID N° 452B

FIGURE 452B

FEUILLE DE REMPLACEMENT (REGLE 26)

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```

1021/341
att gac ctc gta tca tct gag tta gtc gcc cgc gca atg ggc atc cgc gtg tta tgg gta
ile asp leu val ser ser glu leu val ala arg ala met gly ile arg val leu ser val
1081/361
tta cgt gac agt ctg tgg gca agg agg gcc gca tgc cac tct ccg atc atg agc agc gga
leu arg asp ser leu ser ala arg arg asp ala cys his ser pro ile met ser ser gly
1141/381
tgc ttg acc aga tgg aga gcg ctc tct acg ccg aag atc cca agt tgg cat cga gtg tcc
cys leu thr arg ser arg ala leu ser thr pro lys ile pro ser ser his arg val ser
1201/401
gtg gcg ggg gct tcc gcg cac cga ccg cgc ggc ggc gcc tgc agg gcg cgg cgt tgt tca
val ala gly ala ser ala his arg pro arg gly gly ala cys arg ala arg arg cys ser
1261/421
tca tgg gtc tgg gga tgt tgg ttt ccg gcg tgg cgt tca aag aga cca tga tgg gaa ggt
ser ser val trp gly cys trp phe pro ala trp arg ser lys arg pro opa ser glu val
1321/441
tcc cga tac tca gcg ttc tgg gtc ttg tgg tga tgt tgg gtg gtg tgg tgt atg cca tca
ser arg tyr ser ala phe ser val leu ser opa cys ser val val trp cys met pro ser
1381/461
ccg gtc ctc ggt tgt ccg gca gga tgg atc gtg gcg gat ccg ccg ctg ggg ctt cgc gcc
pro val leu gly cys pro ala gly trp ile val ala asp arg leu leu gly leu arg ala
1441/481
agc gtc gta cca agg ggg ccg ggg gct cat tca cca gcc gta tgg aag atc
ser val val pro arg gly pro gly ala his ser pro ala val trp lys ile

```

SEQ ID N° 452B (suite)

FIGURE 452B (suite)

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fragment seq452A en décalage moins 2 pour la phase de lecture

```

1/1                               31/11
tct ccc cgg aca cca ggt cat ccg gcg aga tgg tga tgg agg ctc gga ccc gca ggc atc
ser pro arg thr pro gly his pro ala arg trp opa ser arg leu gly pro ala gly ile
61/21                               91/31
cgg tag cca gag gca cca gca tca gca aca tgg cga tgg cca gca tgc cgc gcc gtc ggg
arg AMB pro glu ala pro ala ser ala thr ser arg trp pro ala cys arg ala val gly
121/41                               151/51
tcc ttg cca ctc gag atc ctt ggg atg aag gtg ggg cat agc tag cgc gca cca ggt cat
ser leu pro leu ala ile leu gly met thr val gly his ser AMB arg ala pro gly his
181/61                               211/71
cgt gcc aga ccg ggc atg ccg cgt cgg caa gct gtc ggg cgc ggg tta gag cgg tag cgt
arg ala arg pro gly met pro arg arg gln ala val gly arg gly leu glu arg AMB arg
241/81                               271/91
gcg acc cag gat gcc gaa tgc tgg ggg gtc acc gcc gaa gtg gta gcc gcg gat gat gtc
ala thr gln asp gly glu cys ser gly val thr gly glu val val ala ala asp asp val
301/101                               331/111
ggt gaa gcc caa ccg gcg gta caa ccg cca cgc ccg att gtc ctc acc gtt ggt ctc cgg
gly glu ala gln pro ala val gln pro pro arg pro ile val leu thr val gly leu arg
361/121                               391/131
tgt gga gag cag gac gtt gtc ctc gtc gcg acc gcc tag cag tgg gcg gcc caa cgc ctc
cys gly glu gln asp val val leu val ala thr gly AMB gln ser ala gly gln arg leu
421/141                               451/151
ccc gag gcc acg gcc ttg agc gcg ggg aag gat gtg caa ttc agt caa ctc gaa gta gct
pro glu ala thr ala leu ser ala gly lys asp val gln phe ser gln leu glu val ala
481/161                               511/171
ggt cat cag tgg gcc gat cgc tag gcg cgg aaa gcc gct gcg tgg caa gcc cag tac cac
gly his gln ser gly asp arg AMB ala arg lys ala ala ala leu gln ala gln tyr his
541/181                               571/191
cug ctg ttg cca cca ctg gcc ggg cgg ccc ggg ata gcc gta cgc cac tcc gag cat tgg
leu leu leu pro pro leu ala gly arg pro gly ile ala val arg his ser glu his trp
601/201                               631/211
cgc gtt gct cag tta gcc gcc cga cgg cag cgc cgt ggt gcc gcc gcc ctc gcc ctg ctc
arg val ala gln phe gly gly arg arg gln arg arg gly val gly gly leu gly leu phe
661/221                               691/231
gcc tgc cgt tac ctc gac ggc cgc gac cgc ctg cca gcc gcg ccg ccg gat gtg ctc cag
gly cys arg tyr leu asp gly arg asp arg leu pro ala ala pro pro asp val leu gln
721/241                               751/251
cca cat tgg gcc gcg caa agt ctc ggt gcc cct ggg gta gcg cat cgc gtc gac ata cac
pro his trp gly ala gln ser leu gly ala pro gly val ala his arg val asp ile his
781/261                               811/271
cgt cag gcc atc acc gag gcg gcg ctc cat atc gct ggg cgg cag atc gat gag gaa tat
arg gln gly ile thr glu ala ala leu his ile ala gly arg gln ile asp glu glu tyr
841/281                               871/291
cgc caa cgc gcg gtg tcc tcc tca tct gat gaa ccg atg cgt gct tgc gca cca gta tgg
arg gln arg ala val ser ser ser cys asp gln pro met arg ala cys ala pro val ser
901/301                               931/311
gac aag ccg atg agg ccg ccc gcg ctg gac ggg gct tct agc gta tgg ccg ttt ccg atc
asp lys pro met arg pro pro ala leu asp gly ala cys ser val trp pro phe pro leu

```

SEQ ID N° 452C

FIGURE 452C

FEUILLE DE REMPLACEMENT (REGLE 26)

152/185

961/321
 agc tgc tgc ctg cgg cgc cgc cgg gat aga atc gcc cgc gaa cca gtg gta cgg cgc aga
 ser ser ser leu arg arg arg arg asp arg ile ala arg glu pro val val arg arg arg
 1021/341
 ttg acc tgc tac cat ctg agt tag ttg ccc gcc caa tgg gca tcc gcc tgt tat cgg tat
 leu thr ser tyr his leu ser AMB leu pro ala gln trp ala ser ala cys tyr arg tyr
 1081/361
 tac gtg aca gtc tgt cgg caa gga ggg aag cat gcc act ctg cga tca tga gca gcc gat
 tyr val thr val cys arg gln gly gly thr his ala thr leu arg ser OPA ala ala asp
 1141/381
 gct tga cca gat cga gag cgc tct cta cgc cga aga tcc caa gtt cgc atc gag tgt ccc
 ala OPA pro asp arg glu arg ser leu arg arg arg ser gln val arg ile glu cys pro
 1201/401
 tgg cgg ggg ctt cgg cgc acc gac cgc ggg gcc gcc cct gca ggg cgc gcc gtt gtt cat
 trp arg gly leu pro arg thr asp arg ala ala ala pro ala gly arg gly val val his
 1261/421
 cat cgg tat ggg gat gtt ggt ttc cgg cgt gcc gtt caa aga gac cat gat cgg aag ttt
 his arg ser gly asp val gly phe arg arg gly val gln arg asp his asp arg lys phe
 1321/441
 ccc gat act cag cgt ttt cgg ttt tgt cgt gat gtt cgg tgg tgt ggt gta tgc cat caa
 pro asp thr gln arg phe arg phe cys arg asp val arg trp cys gly val cys his his
 1381/461
 cgg tcc tgc gtt gtc cgg cag gat gga tgc tgg cgg atc gcc tgc tgg gcc ttc gcc cca
 arg ser ser val val arg gln asp gly ser trp arg ile gly cys trp gly phe ala pro
 1441/481
 ggc tgc tac caa ggg gcc cgg ggg ctg att cac cag cgg tat gga aga tc
 ala ser tyr gln gly gly arg gly leu ile his gln pro tyr gly arg

SEQ ID N° 452C (suite 1)

FIGURE 452C (suite 1)

ORF de seq 452A directement en fusion avec phoA

cag tct gtc gcc aag gag gga cgc atg cca ctg tcc gat cat gag cag cgg
 gln ser val gly lys glu gly arg met pro leu ser asp his glu gln arg
 1141/381
 atg ctt gac cag atc gag agc gct ctg tac gcc gaa gat ccc aag ttc gca tgc agt gtc
 met leu asp gln ile glu ser ala leu tyr ala glu asp pro lys phe ala ser ser val
 1201/401
 cgt gcc ggg gcc ttc cgc gca cgg acc gcc cgg cgg cgc ctg cag gcc gcc gcc ttg ttc
 arg gly gly gly phe arg ala pro thr ala arg arg arg leu gln gly ala ala leu phe
 1261/421
 atc atc ggt cgg ggg atg ttg gtt tcc gcc ggg gcc ttc aaa gag acc atg atc gga agt
 ile ala gly leu gly met leu val ser gly val ala phe lys glu thr met ile gly ser
 1321/441
 ttc cgg ala ctg agc gtt ttc ggt ttt gta ggg atg ttc ggt ggt gtc gtc tat gcc atc
 phe pro ile leu ser val phe gly phe val val met phe gly gly val val tyr ala ile
 1381/461
 acc ggt cct cgg tgg tcc gcc agg atg gat cgt gcc gga tgc gct gct ggg gct tgc cgc
 thr gly pro arg leu ser gly arg met asp arg gly gly ser ala ala gly ala ser arg
 1441/481
 cag cgt cgt acc aag ggg gcc ggg gcc tca ttc acc agc cgt atg gaa gat c
 gln arg arg thr lys gly ala gly gly ser phe thr ser arg met glu asp

SEQ ID N° 45A

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 45A

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Séquence Rv2169c prédite par Cole et al., 1998 (Nature 393:537-544) et contenant Seq45A

```

1/1                               31/11
atg cca ctc tcc gat cat gag cag cgg atg ctt gac cag atc gag agc gct ctc tac gcc
Met pro leu ser asp his glu gln arg met leu asp gln ile glu ser ala leu tyr ala
61/21                               91/31
gaa gat ccc aag ttc gca tcc agt gtc cgt ggc ggg ggc ttc cgc gca cgg acc ggc cgg
glu asp pro lys phe ala ser ser val arg gly gly gly phe arg ala pro thr ala arg
121/41                               151/51
cgg cgc ctg cag ggc ggc ggc ttg ttc atc atc ggt ctg ggc atg ttg gtr tcc ggc gtg
arg arg leu gln gly ala ala leu phe ile ile gly leu gly met leu val ser gly val
161/61                               211/71
ggc ttc aaa gag acc atg atc gga agt ttc cgc ata ctc agc gtt ttc ggt ttt gtc gtg
ala phe lys glu thr met ile gly ser phe pro ile leu ser val phe gly phe val val
241/81                               271/91
atg ttc ggt ggt gtg gtg tat gcc atc acc ggt cct cgg ttg tcc ggc agg atg gat cgt
met phe gly gly val val tyr ala ile thr gly pro arg leu ser gly arg met asp arg
301/101                               331/111
ggc gga tcc gat gct ggc gat tcc cgc cag cgt cgt acc aag ggc gcc ggc ggc tcc ttc
gly gly ser ala ala gly ala ser arg gln arg arg thr lys gly ala gly gly ser phe
361/121                               391/131
acc agc cgt atg gaa gat cgg ttc cgg cgc cgc ttc gac gag taa
thr ser arg met glu asp arg phe arg arg arg phe asp glu OCH

```

SEQ ID N° 45D

FIGURE 45D

ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv2169c

```

1/1                               31/11
tga cag tct gtc ggc aag gag gga cgc atg cca ctc tcc gat cat gag cag cgg atg ctt
ORF gln ser val gly lys glu gly arg met pro leu ser asp his glu gln arg met leu
61/21                               91/31
gac cag atc gag agc gct ctc tac gcc gaa gat ccc aag ttc gca tcc agt gtc cgt ggc
asp gln ile glu ser ala leu tyr ala glu asp pro lys phe ala ser ser val arg gly
121/41                               151/51
ggg ggc ttc cgc gca cgc acc ggc cgg cgg cgc ctg cag ggc ggc ggc ttg ttc atc atc
gly gly phe arg ala pro thr ala arg arg arg leu gln gly ala ala leu phe ile ile
161/61                               211/71
ggt ctg ggc atg ttg gtt tcc ggc gtg ggc ttc aaa gag acc atg atc gga agt ttc cgc
gly leu gly met leu val ser gly val ala phe lys glu thr met ile gly ser phe pro
241/81                               271/91
ata ctc agc gtt ttc ggt ttt gtc gtg atg ttc ggt ggt gtg gtg tat gcc atc acc ggt
ile leu ser val phe gly phe val val met phe gly gly val val tyr ala ile thr gly
301/101                               331/111
cct cgg ttg tcc ggc agg atg gat cgt ggc gga tcc gat gct ggc gat tcc cgc cag cgt
pro arg leu ser gly arg met asp arg gly gly ser ala ala gly ala ser arg gln arg
361/121                               391/131
cgt acc aag ggc gcc ggc ggc tcc ttc acc agc cgt atg gaa gat cgg ttc cgg cgc cgc
arg thr lys gly ala gly gly ser phe thr ser arg met glu asp arg phe arg arg arg
421/141
tcc gac gag taa
phe asp glu OCH

```

SEQ ID N° 45F

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 45F

154/185

```

1/1                               31/11
cag ccg cgc cga atc gac cag gcc atc acg ccc ggt ccc ttc tcc gcg ttc ctc aac aac
gln pro arg arg ile asp gln gly leu thr pro gly his phe ser ala phe leu asn asn
61/21                               91/31
tcc ggt gaa cat cgc acc agg tta gcc agc aac ccc gcg gac ccg cac ccc act cgc cga
ser gly glu his arg thr arg leu gly ser asn pro ala asp pro his pro thr arg arg
121/41                               151/51
ccg gcc aac toa cag aca ccc tat acg atg cag ggt atg cgg acc ccc aga cgc cac tgc
pro ala asn ser gln thr pro ser thr met gln gly met arg thr pro arg arg his cys
181/61                               211/71
cgt cgc atc gcc gta ctc gcc gcc gta agc atc gcc gcc act gtc gtt gcc gcc tgc tgc
arg arg ile ala val leu ala ala val ser ile ala ala thr val val ala gly cys ser
241/81                               271/91
tcg gcc tcg aag cca agc gcc gga cca ctt ccg gac gcg aag ccg ctg gtc gag gag gcc
ser gly ser lys pro ser gly gly pro leu pro asp ala lys pro leu val glu glu ala
301/101                               331/111
acc gcg cag acc aag gct ctc aag agc gcc cac atg gtc ctg acg gtc aac gcc aag atc
thr ala gln thr lys ala leu lys ser ala his met val leu thr val aac gly lys ile

```

SEQ ID N° 46A

FIGURE 46A

```

1/1                               31/11
acc cgc gcc gca tcg aac agg gcc toa cgc ccg gtc act tct ccg cgt tcc toa aca att
ser arg ala ala ser thr arg ala ser arg pro val thr ser pro arg ser ser thr ile
61/21                               91/31
ccg gtc aac atc gca cca ggt tag gca gca atc ccg cgg acc cga acc cca ctc gcc gac
pro val asn ile ala pro gly AMB ala ala ile pro arg thr arg thr pro leu ala asp
121/41                               151/51
cgg cca act ccc aga cac cct cta cga tgc agg gta tgc gga ccc cca gac gcc act gcc
arg pro thr his arg his pro leu arg cys arg val cys gly pro pro asp ala thr ala
181/61                               211/71
gtc gca tcg ccg tcc tcg ccg ccg tta gca tcg ccg cca ctg tcg ttc ccg gct gct cgt
val ala ser pro ser ser pro pro leu ala ser pro pro leu ser leu pro ala ala arg
241/81                               271/91
cgg gct cga agc caa gcc gcc gac cac ttc cgg acg cga agc cgc tgg tcg agg agg cca
arg ala arg ser gln ala ala asp his phe arg thr arg ser arg trp ser arg arg pro
301/101                               331/111
ccg cgc aga cca agg ctc toa aga gcc cgc aca tgg tgc tga ccg toa acg gca aga tc
pro arg arg pro arg leu ser arg ala arg thr trp cys ORF arg ser thr ala arg

```

SEQ ID N° 46B

FIGURE 46B

135/185

1/1 31/11
 gcc gag cag cat cga cca ggg cct cac gcc cgg tca ctt ctc cga gtt cct cca caa ttc
 ala ala pro his arg pro gly pro his ala arg ser leu leu arg val pro gln gln phe
 61/21 51/31
 cgg tga aca tag cac cag gtt agg cag cca tcc cgc gga ccc gca ccc cac tcg cag acc
 arg cfa thr ser his gln val arg gln gln ser arg gly pro ala pro his ser pro thr
 121/41 151/51
 gcc caa ctc aca gac acc ctc tac gat gca ggg tat gcc gac ccc cag acg cca ctg cag
 gly gln leu thr asp thr leu tyr asp ala gly tyr ala asp pro gln thr pro leu pro
 181/61 211/71
 tag cat cgc cgt cct cgc cgc cgt tag cat cgt cgc cac tgt cgt tgc cgg ctg ctc gtc
 ser his arg arg pro arg arg arg AMB his arg arg his cys arg cys arg leu leu val
 241/81 271/91
 ggg ctc gaa gcc aag cgg cgg acc act tcc gga cgc gaa gcc gcc cgt cga gga gcc cac
 gly leu gln ala lys arg arg thr thr ser gly arg gln ala ala gly arg gly gly his
 301/101 331/111
 cgc gca gac caa gcc tct cca gag cgc gca cat ggt gct gac ggt caa cgg caa gat c
 arg ala asp gln gly ser gln glu arg ala his gly ala asp gly gln arg gln asp

SEQ ID N° 46C

FIGURE 46C

156/165

Séquence codante Rv1411c prédite par Cole et al., 1998 (Nature 393: 537-544) et contenant seq46A:

```

1/1                               31/11
atg cgg aac ccc aga cgc cac tgc cgt cgc atc gcc gtc ctc gcc gcc gtc agc atc gcc
Met arg thr pro arg arg his cys arg arg ile ala val leu ala ala val ser ile ala
61/21                               51/31
gcc act gtc ggt gcc gcc tgc tgc tgc gcc tgc aag cca agc gcc gga cca ctt ccg gac
ala thr val val ala gly cys ser ser gly ser lys pro ser gly gly pro leu pro asp
121/41                               151/51
ggg aag ccg ctg gtc gag gag gcc acc gcc cag acc aag gct ctc aag agc gcc cac atg
ala lys pro leu val glu glu ala thr ala gln thr lys ala leu lys ser ala his met
181/61                               211/71
gtg ctg aag gtc aac gcc aag atc ccg gga ctg tct ctg aag acg ctg agc gcc gat ctc
val leu thr val asn gly lys ile pro gly leu ser leu lys thr leu ser gly asp leu
241/81                               271/91
acc acc aac ccc acc gcc gcc acg gga aac gtc aag ctc acg ctg ggt ggg tct gat atc
thr thr asn pro thr ala ala thr gly asn val lys leu thr leu gly gly ser asp ile
301/101                               331/111
gat gcc gac ttc gtg gtg ttc gac ggg atc ctg tac gcc acc ctg acg ccc aac cag tgg
asp ala asp phe val val phe asp gly ile leu tyr ala thr leu thr pro asn gln trp
361/121                               391/131
agc gat ttc ggt ccc gcc gcc gac atc tac gac ccc gcc cag gtg ctg aat ccg gat acc
ser asp phe gly pro ala ala asp ile tyr asp pro ala gln val leu asn pro asp thr
421/141                               451/151
ggc ctg gcc aac gtg ctg gcc aat ttc gcc gac gca aac gcc gaa ggg ccg gat acc atc
gly leu ala asn val leu ala asn phe ala asp ala lys ala glu gly arg asp thr ile
481/161                               511/171
aac gcc cag aac acc atc cgc atc agc ggg aag gta tgc gca cag gcc gtg aac cag ata
asn gly gln asn thr ile arg ile ser gly lys val ser ala gln ala val asn gln ile
541/181                               571/191
ggc ccg ccg ttc aac gcc acg cag ccg gtg ccg gcc acc gtc tgc att cag gag acc gcc
ala pro pro phe asn ala thr gln pro val pro ala thr val trp ile gln gln thr gly
601/201                               631/211
gat cat aac cag gca cag gcc cag ttg gac cgc gcc tgc gcc aat tcc gtc cag atg acc
asp his gln leu ala gln ala gln leu asp arg gly ser gly asn ser val gln met thr
661/221                               691/231
ttg tgc aaa tgg gcc gag aag gtc cag gtc acg aag ccc ccg gtc agc tga
leu ser lys trp gly glu lys val gln val thr lys pro pro val ser CFA

```

SEQ ID N° 46D

FIGURE 46D

157/165

ORF d'après par Cole et al., 1998 (Nature 393: 537-544);
et contenant la séquence codante Rv1411c:

```

1/1                               31/11
tag ctc acc cag gta gga ccg gtt cag tgt ctc ggc cat cac gtc ggc ggt gaa ttg gcc
AMS leu thr gln val gly pro val gln cys leu gly his his val gly gly glu leu ala
61/21                               91/31
gtc ggg caa tac atc gac gac cgt cag aca cac gcc gtt gac agc gat cga gtc gcc gtg
val gly gln tyr ile asp asp arg gln thr his ala val asp ser asp arg val ala val
121/41                               151/51
gcc ggc gtc ggc ggt aac cat cgg acc gag gat ggt cag cag cgc cgc atc gac cag gcc
ala gly val gly gly asn his arg thr ala asp gly gln pro arg arg ile asp gln gly
181/61                               211/71
ctc acg ccc ggt cac ttc tcc gcg ttc ctc aac aat tcc ggt gaa cat cgc acc agg tta
leu thr pro gly his phe ser ala phe leu asn asn ser gly glu his arg thr arg leu
241/81                               271/91
ggc agc aat ccc gcg gac ccg cac ccc act cgc cga cag gcc aac tca cag aca ccc tct
gly ser asn pro ala asp pro his pro thr arg arg pro ala asn ser gln thr pro ser
301/101                               331/111
acg atg cag ggt atg cgg acc ccc aga cgc cac tgc cgt cgc atc gcc gtc ctc gcc gcc
thr met gln gly met arg thr pro arg arg his cys arg arg ile ala val leu ala ala
361/121                               391/131
gtt agc atc gcc gcc act gtc gtt gcc ggc tgc tgc tgc ggc tgc aag cca agc gcc gga
val ser ile ala ala thr val val ala gly cys ser ser gly ser lys pro ser gly gly
421/141                               451/151
cca ctt ccg gac gcg aag ccg ctg gtc gag gag gcc acc gcg cag acc aag gct ctc aag
pro leu pro asp ala lys pro leu val glu glu ala thr ala gln thr lys ala leu lys
481/161                               511/171
agg gcg cac atg gtg ctg acg gtc aac gcc aag atc ccg gga ctg tot ctg aag acg ctg
ser ala his met val leu thr val asn gly lys ile pro gly leu ser leu lys thr leu
541/181                               571/191
agg gcc gat ctc acc acc aac ccc acc gcc gcg ccg gga aac gtc aag ctc acc ctg ggt
ser gly asp leu thr thr asn pro thr ala ala thr gly asn val lys leu thr leu gly
601/201                               631/211
ggg tct gat atc gat gcc gac ttc gtg gtg ttc gac ggc atc ctg tac gcc acc ctg acg
gly ser asp ile asp ala asp phe val val phe asp gly ile leu tyr ala thr leu thr
661/221                               691/231
ccc aac cag tgg agc gat ttc ggt ccc gcc gcc gac atc tac gac ccc gcc cag gtg ctg
pro asn gln trp ser asp phe gly pro ala ala asp ile tyr asp pro ala gln val leu
721/241                               751/251
aat ccg gat acc gcc ctg gcc aac gtg ctg gcg aat ttc gcc gac gca aac gcc gaa ggg
asn pro asp thr gly leu ala asn val leu ala asn phe ala asp ala lys ala glu gly
781/261                               811/271
cgg gat acc atc aac gcc cag aac acc atc cgc acc agc ggc aag gta tgc gca cag gcc
arg asp thr ile asn gly gln asn thr ile arg ile ser gly lys val ser ala gln ala
841/281                               871/291
gtg aac cag ata gcg ccg ccg ttc aac gcg acg cag ccg gtg ccg gcg acc gtc tgg att
val asn gln ile ala pro pro phe asn ala thr gln pro val pro ala thr val trp ile
901/301                               931/311
cag gag acc gcc gat cat caa ctg gca cag gcc cag ttc gac cgc gcc tgc gcc aat tcc
gln glu thr gly asp his gln leu ala gln ala gln leu asp arg gly ser gly asn ser
961/321                               991/331
gtc cag atg acc tgg tgc aaa tgg gcc gag aag gtc cag gtc acc aag ccc ccg gtg agc
val gln met thr leu ser lys trp gly glu lys val gln val thr lys pro pro val ser
1021/341
tga
opa

```

SEQ ID N° 46F

FEUILLE DE REMPLACEMENT (REGLE 26)

158/185

```

1/1                               31/11
gag ctg gtc aac ggc gcc ggc atc gac gac gcc gcc gtc gtg acc tgc cgg ccg gac agc
glu leu val asn gly ala gly ile asp asp ala ala val val thr cys arg pro asp ser
61/21                               91/31
ctg gcc gat gcc cag cag atg gtc gag gcc gca ctg gcc cga tat gcc cgt tgg gac gga
leu ala asp ala gln gln met val glu ala ala leu gly arg tyr gly arg leu asp gly
121/41                               151/51
gtg ttg gtg gcc tgg gcc agc aac cat ggg gcc gcc att acc gag atg gcc gtc gag gcc
val leu val ala ser gly ser asn his val ala pro ile thr glu met ala val glu asp
181/61                               211/71
ttc gac gcc gtg atg gac gcc aac gtg cgg ggt gcc tgg ctg gtg tgt cgg gcc gcc gga
phe asp ala val met asp ala asn val arg gly ala trp leu val cys arg ala ala gly
241/81                               271/91
cgg gtg ctg ctg gag cag ggt cag gcc gcc agc gtg ctg ctg gtg tgg tcc gtt cgc gcc
arg val leu leu glu gln gly gln gly gly ser val val leu val ser ser val arg gly
301/101                               331/111
ggg ttg gcc aat gcc gcc ggt tac agc gcc tac tgc ccg tgg aag gcc gcc acc gat c
gly leu gly asn ala ala gly tyr ser ala tyr cys pro ser lys ala gly thr asp

```

SEQ ID N° 47A

FIGURE 47A

```

1/1                               31/11
agc tgg tca acg ccg ccg gca tgg acg acg ccg ccg tgg tga cct gcc gcc cgg aca gcc
ser trp ser thr ala pro ala ser thr thr pro pro ser opa pro ala gly arg thr ala
61/21                               91/31
tgg ccg atg ccc agc aga tgg tgg agg cgg cca tgg gcc gat atg gcc gtt tgg acg gag
trp pro met pro ser arg trp ser arg arg his trp ala asp met ala val trp thr glu
121/41                               151/51
tgt tgg tgg cct cgg gca gca acc atg tgg cgc cca tta ccg aga tgg ccg tgg agg act
cys trp trp pro arg ala ala thr met trp arg pro leu pro arg trp pro ser arg thr
181/61                               211/71
tcg acg ctg tga tgg acg cga acg tgc ggg gtg cct gcc tgg tgt gtc ggg cgg ccg gac
ser thr leu opa trp thr arg thr cys gly val pro gly trp cys val gly arg pro asp
241/81                               271/91
ggg tgc tgc tgg agc agg gtc agg gcc gca gcc tgg tgc tgg tgt cgt ccg ttc gcc gcc
gly cys cys ser ser arg val arg ala ala ala trp cys trp cys arg pro phe ala ala
301/101                               331/111
ggt tgg gca atg ccg ccg gtt aca ggg cgt act gcc cgt cgs agg cgg gca ccg atc
gly trp ala met pro pro val thr ala arg thr ala arg arg arg arg ala pro ile

```

SEQ ID N° 47B

FIGURE 47B

159/185

```

1/1                               31/11
gct ggt cca cgg cgc cgg cat cga cga cgc cgc cgt cgt gac ctg ccg gcc gga cag cct
ala gly gln arg arg arg his arg arg arg arg arg arg asp leu pro ala gly gln pro
61/21                               91/31
ggc cga tgc cca gca gat ggt cga ggc ggc act ggg ccg ata tgg ccg ttt gga cgg agt
gly arg cys pro ala asp gly arg gly gly thr gly pro ile trp pro phe gly arg ser
121/41                               151/51
gtt ggt ggc ctg ggg cag caa cca tgt ggc gcc cat tac cga gat ggc cgt cga gga ctc
val gly gly leu gly gln gln pro cys gly ala his tyr arg asp gly arg arg gly leu
181/61                               211/71
cga cgc tgt gat gga cgc gaa cgt ggc ggc tgc ctg gct ggt gtg tgg ggc ggc ccg acg
arg arg cys asp gly arg glu arg ala gly cys leu ala gly val ser gly gly arg thr
241/81                               271/91
ggt ggt gct cga gca ggg tca ggg ccg cag cgt ggt gct ggt gtc gtc cgt tgg ccg ccg
gly ala ala arg ala gly ser gly arg gln arg gly ala gly val val arg ser arg arg
301/101                               331/111
gtt ggg cca tgc cgc cgg tta cag cgc gta ctg ccc gtc gaa gcc ggg caa cga tc
val gly gln cys arg arg leu gln arg val leu pro val glu gly gly his arg

```

SEQ ID N° 47C

FIGURE 47C

160/185

Séquence codante Rv1714 prédite par Cole et al., 1998 (Nature 393: 537-544) et contenant seq 47A:

```

1/1                               31/11
gtg gag gas atg gcg ctg gct cag cag gtg cag aac ctg ggt ctg gcg cgc ttc agc gtg
val glu glu met ala leu ala gln gln val pro asn leu gly leu ala arg phe ser val
61/21                               91/31
cag gac aag tgg atc cag atc acc ggc ggc acc ggt tgg ttg ggc cga gtt gcc gcc cgg
gln asp lys ser ile leu ile thr gly ala thr gly ser leu gly arg val ala ala arg
121/41                               151/51
ggc ctg gcc gac gcg gga gcg cgg ctg aca ctg gcc ggc ggc aac tgg gcc ggt ctg gcc
ala leu ala asp ala gly ala arg leu thr leu ala gly gly asn ser ala gly leu ala
181/61                               211/71
gag ctg gtc aac ggc gcc gcc atc gac gac gcc gcc gtc gtg acc tgc cgg cgg gac agc
glu leu val asn gly ala gly ile asp asp ala ala val val thr cys arg pro asp ser
241/81                               271/91
ctg gcc gat gcc cag cag atg gtc gag ggc gca ctg ggc cga tat gcc cgt ttg gac gga
leu ala asp ala gln gln met val glu ala ala leu gly arg tyr gly arg leu asp gly
301/101                               331/111
gtg ttg gtc gcc tgg gcc agc aac cat gtg ggc gcc att acc gag atg gcc gtc gag gac
val leu val ala ser gly ser asn his val ala pro ile thr glu met ala val glu asp
361/121                               391/131
ttc gac gct gtg atg gac gcg aac gtg cgg ggt gcc tgg ctg gtg tgt cgg gcc gcc gga
phe asp ala val met asp ala asn val arg gly ala trp leu val cys arg ala ala gly
421/141                               451/151
cgg gtg ctg ctg gag cag ggt cag gcc gcc agc gtg gtg ctg gtg tgg tcc gtt cgt gcc
arg val leu leu glu gln gly gln gly gly ser val val leu val ser ser val arg gly
481/161                               511/171
ggg ttg gcc aat gcc gcc ggt tac agc gcc tac tgc cgg tgg aag gcg gcc acc gat ctg
gly leu gly asn ala ala gly tyr ser ala tyr cys pro ser lys ala gly thr asp leu
541/181                               571/191
ttg gcc aag aca ttg gcg gcc gaa tgg gcc ggt cag gcc att cgg gtg aac ggg ctg gcc
leu ala lys thr leu ala ala glu trp gly gly his gly ile arg val asn ala leu ala
601/201                               631/211
ccg acg gtg ttc cgg tcc gcc gtg acc gag tgg atg ttc acc gac gat ccg aag gcc cgg
pro thr val phe arg ser ala val thr glu trp met phe thr asp asp pro lys gly arg
661/221                               691/231
gcc acc cgg gag gcg atg ctg gcc cgg atc cgg ttg cgc cgc ttc gcc gaa ccg gaa gac
ala thr arg glu ala met leu ala arg ile pro leu arg arg phe ala glu pro glu asp
721/241                               751/251
ttc gtc gcc gcc ctg atc tat ctg ctg agc gac gcc tgg agc ttc tac acc gcc cag gtg
phe val gly ala leu ile tyr leu leu ser asp ala ser ser phe tyr thr gly gln val
781/261                               811/271
atg tat ctg gac gcc ggg tac acc gca tgc tga
met tyr leu asp gly gly tyr thr ala cys CAA

```

SEQ ID N° 47D

FIGURE 47D

161/185

ORF d'après Cole et al., 1998 (Nature 393: 537-544) et contenant la séquence codante Rv1714:

```

24/1
tag gtg gag gaa atg ggg ctg gct cag cag gtg cgg aac ctg ggt ctg gag cgc ttc agc
AMB val glu glu met ala leu ala gln gln val pro asn leu gly leu ala arg phe ser
34/21
gtg cag gac aag tgg atc ctg atc acc ggc ggc acc ggt tgg ttg ggc cga gtt gcc gcc
val gln asp lys ser ile leu ile thr gly ala thr gly ser leu gly arg val ala ala
144/41
cgg ggc ctg gcc gac ggc gga ggc cgg ctg aca ctg gcc ggc gcc aac tgg gcc ggt ctg
arg ala leu ala asp ala gly ala arg leu thr leu ala gly gly asn ser ala gly leu
204/61
gcc gag ctg gtc aac ggc gcc ggc atc gac gac gcc gcc gtc gtg acc tgc cgg ccg gac
ala glu leu val asn gly ala gly ile asp asp ala ala val val thr cys arg pro asp
264/81
agg ctg gcc gat gcc cag cag atg gtc gag ggc gca ctg gcc cga tat gcc cgt ttg gac
ser leu ala asp ala gln gln met val glu ala ala leu gly arg tyr gly arg leu asp
324/101
gga gtg ttg gtg gcc tgg ggc agc aac cat gtg ggc ccc att acc gag atg gcc gtc gag
gly val leu val ala ser gly ser asn his val ala pro ile thr glu met ala val glu
384/121
gac ttc gac gct gtg atg gac ggc aac gtg cgg ggt gcc tgg ctg gtg tgt cgg ggc gcc
asp phe asp ala val met asp ala asn val arg gly ala trp leu val cys arg ala ala
444/141
gga cgg gtg ctg ctg gag cag ggt cag gcc ggc agc gtg gtg ctg gtg tgg tcc gtt cgc
gly arg val leu leu glu gln gly gln gly gly ser val val leu val ser ser val arg
504/161
ggc ggg ttg gcc aat gcc gcc ggt tac agc ggc tac tgc ccg tgg aag ggc gcc acc gat
gly gly leu gly asn ala ala gly tyr ser ala tyr cys pro ser lys ala gly thr asp
564/181
ctg ttg gcc aag aca ttg ggc gcc gaa tgg gcc ggt cag gcc atc cgg gtg aac ggc ctg
leu leu ala lys thr leu ala ala glu trp gly gly his gly ile arg val asn ala leu
624/201
ggc cgg acc gtc ttt cgg tcc ggc gtg acc gag tgg atg ttc acc gac gat ccg aag gcc
ala pro thr val phe arg ser ala val thr glu trp met phe thr asp asp pro lys gly
684/221
cgg gcc acc cgg gag ggc atg ctg gcc cgg atc ccg ttg cgc cgc ttc gcc gaa ccg gaa
arg ala thr arg glu ala met leu ala arg ile pro leu arg arg phe ala glu pro glu
744/241
gac ttc gtc gcc gcc ctg atc tat ctg ctg agc gac gcc tgg agc ttc tac acc gcc cag
asp phe val gly ala leu ile tyr leu leu ser asp ala ser ser phe tyr thr gly gln
804/261
gtg atg tat ctg gac gcc ggc tac acc gca tgc tga
val met tyr leu asp gly gly tyr thr ala cys OPA

```

SEQ ID N° 47F

FIGURE 47F

162/185

```

1/1                               31/11
agg ctc atg agc aag aag gtc ctc atc att ggc gag ggt gtc ggc ggc ctg acc acc gcc
arg leu met ser lys thr val leu ile leu gly ala gly val gly gly leu thr thr ala
61/21                               91/31
gac acc ctc cgt caa ctg cta cca cct gag gat c
asp thr leu arg gln leu leu pro pro glu asp

```

SEQ ID N° 48A

FIGURE 48A

```

1/1                               31/11
ggc tca tga gca aga cgg ttc tca tcc ttc ggc cgg gtc tgc ggc gcc tga cca ccg ccg
gly ser oaa ala arg arg phe ser ser leu ala arg val ser ala ala oaa pro pro pro
61/21                               91/31
aca ccc tcc gtc aac tgc tac cac ctg agg atc
thr pro ser val asn cys tyr his leu arg ile

```

SEQ ID N° 48B

FIGURE 48B

```

1/1                               31/11
gct cat gag caa gac ggt tct cat cct tgg cgc ggg tgt cgg cgg cct gac cac cgc cgc
ala his glu gln asp gly ser his pro trp arg gly cys arg arg pro asp his arg arg
61/21
cac cct ccg tca act gct acc acc tga gga tc
his pro pro ser thr ala thr thr oaa gly

```

SEQ ID N° 48C

FIGURE 48C

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Séquence codante Rv0331 prédite par Cole et al., 1996 (Nature 383: 537-544) et contenant seq48A:

```

1/1                               31/11
atg agc aag aag gtt ctc atc ctt ggc ggc ggt gtc ggc ggc atg acc acc gcc gac acc
Met ser lys thr val leu ile leu gly ala gly val gly gly leu thr thr ala asp thr
61/21                               91/31
ctc cgt caa ctg cta cca cct gag gat cga atc ata ttg gtg gac agg agc ttt gac ggg
leu arg gln leu leu pro pro glu asp arg ile ile leu val asp arg ser phe asp gly
121/41                               151/51
acc ctg ggc ctg tgg ttg cta tgg gtg ttg cgg ggc tgg cgg cgg cct gac gac gtc cgc
thr leu gly leu ser leu leu trp val leu arg gly trp arg arg pro asp asp val arg
181/61                               211/71
gtc cgc ccc acc ggc ggc tgg ctg ccc ggt gtg gaa atg gtt act gca acc gtc gcc cac
val arg pro thr ala ala ser leu pro gly val glu met val thr ala thr val ala his
241/81                               271/91
att gac atc ggc gcc cag gta gtg cac acc gac aac agc gtc atc gcc tat gac ggc ttg
ile asp ile ala ala gln val val his thr asp asn ser val ile gly tyr asp ala leu
301/101                               331/111
gtg atc gca tta ggt ggc ggc ctg aac acc gac gcc gtt ccc gga atg tgg gac ggc ctc
val ile ala leu gly ala ala leu asn thr asp ala val pro gly leu ser asp ala leu
361/121                               391/131
gac gcc gac gtc ggc ggc cag ttc tac acc ctg gac ggc ggc ggt gag ctg cgt ggc aag
asp ala asp val ala gly gln phe tyr thr leu asp gly ala ala glu leu arg ala lys
421/141                               451/151
gtc gag ggc ctc gag cac gcc cgg atc gct gtg gct atc gcc ggc gtg ccg ttc aas tgc
val glu ala leu glu his gly arg ile ala val ala ile ala gly val pro phe lys cys
481/161                               511/171
cca gcc gca ccg ttc gaa ggc gcc ttt ctg atc gcc gcc caa ctc ggt gac cgc tac gcc
pro ala ala pro phe glu ala ala phe leu ile ala ala gln leu gly asp arg tyr ala
541/181                               571/191
acc gga acc gta cag atc gac aag ttc aag cct gcc cgg ctg ccg atg ccc gtt gca ggt
thr gly thr val gln ile asp thr phe thr pro asp pro leu pro ser pro val ala gly
601/201                               631/211
ccc gag gtc gcc gag gct ttg gtc tgg atg ctc aag gat cac ggt gtc gcc ttc cat cct
pro glu val gly glu ala leu val ser met leu lys asp his gly val gly phe his pro
661/221                               691/231
cgc aag gcc cta gct cgc gtc gat gag gcc gca agc aag atg cac ttc ggt gac gcc aag
arg lys ala leu ala arg val asp glu ala ala arg thr met his phe gly asp gly thr
721/241                               751/251
tcc gaa ccg ttc gat ctg ctt gcc gtg gtc ccc ccg cac gtg ccc tcc gcc ggc gcc cgg
ser glu pro phe asp leu leu ala val val pro pro his val pro ser ala ala ala arg
781/261                               811/271
tca gcc ggt ctc agc gaa tcc ggg tgg ata ccc gtg gat ccg cgc acc ctg tcc act agc
ser ala gly leu ser glu ser gly trp ile pro val asp pro arg thr leu ser thr ser
841/281                               871/291
gcc gac aac gtg tgg gcc atc ggc gat gcc acc gtg ctg aag ctg ccg aat gcc aas ccg
ala asp asn val trp ala ile gly asp ala thr val leu thr leu pro asn gly lys pro
901/301                               931/311
ctg ccc aag gct gcc gtg ttc gcc gaa gcc cag gcc gca gtt gtc gcc cac gcc gtc gcc
leu pro lys ala ala val phe ala glu ala gln ala ala val val ala his gly val ala
961/321                               991/331
cgc cat ctc ggt tac gac gta gct gag cgc cac ttc acc gcc acc gcc gcc tgc tac gtc
arg his leu gly tyr asp val ala glu arg his phe thr gly thr gly ala cys tyr val
1021/341                               1051/351
gag acc ggt gat cac cag gca gcc aag gcc gac gcc gat ttc ttc gct ccg tgg gcc ccc
glu thr gly asp his gln ala ala lys gly asp gly asp phe phe ala pro ser ala pro
1081/361                               1111/371
tgg gtc acc ctg tac ccg ccg tgg cgg gag ttt ccc gag gag aag gtc gca caa gaa ctg
ser val thr leu tyr pro pro ser arg glu phe his glu glu lys val ala gln glu leu
1141/381
gcc tgg ctg acc cgc tgg aag acc tga
ala trp leu thr arg trp lys thr opa

```

SEQ ID N° 48D

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 48D

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ORF d'après Cole et al., 1998 (Nature 393: 537-544) et contenant la séquence codante Kv0331:

```

1/1                               31/11
tga aca ccc ggc cgc acg cgg cga cca tgc cgg aaa acc ggt cgc cgg gaa tgc tgc ggc
OPA thr pro ala pro thr arg arg gln ser arg lys thr gly pro arg glu cys cys gly
61/21                               91/31
cca tgg gcc gat aat agt ttg act gac tgc gtc agt cac ccc aag acc ttg cgc aag act
pro trp ala asp asn ser leu thr asp ser val ser his pro lys thr leu arg lys thr
121/41                               151/51
ggc ggc gaa tct aat att cca aag ata tat gga act cga tgc gaa gga atc agg ctc atg
ala ala glu ser asn ile pro lys ile tyr gly thr arg cys glu gly ile arg leu met
181/61                               211/71
agc aag acg gtt ctc atc ctc ggc ggc ggt gtc ggc ggc cgc acc acc gcc gac acc ctc
ser lys thr val leu ile leu gly ala gly val gly gly leu thr thr ala asp thr leu
241/81                               271/91
cgt caa ctg cta cca cct gag gat cga atc ata ttg gtg gac agg agc ttt gac ggc acg
arg gln leu leu pro pro glu asp arg ile ile leu val asp arg ser phe asp gly thr
301/101                               331/111
ctg ggc ttg tgc ttg cta tgg gtg ttg cgg ggc tgg cgg cgg cct gac gac gtc cgc gtc
leu gly leu ser leu leu trp val leu arg gly trp arg arg pro asp asp val arg val
361/121                               391/131
cgc ccc acc ggc ggc tgc ctg ccc ggt gtg gaa atg gtt act gca acc gtc gcc cac att
arg pro thr ala ala ser leu pro gly val glu met val thr ala thr val ala his ile
421/141                               451/151
gac atc ggc gcc cag gta gtg cac acc gac aac agc gtc atc ggc tat gac ggc ttg gtg
asp ile ala ala gln val val his thr asp asn ser val ile gly tyr asp ala leu val
481/161                               511/171
atc gca tta ggt ggc ggc ctg aac acc gac gcc gtt ccc gga ctg tgc gac ggc ctc gac
ile ala leu gly ala ala leu asn thr asp ala val pro gly leu ser asp ala leu asp
541/181                               571/191
gcc gac gtc ggc ggc cag ttc tac acc ctg gac gcc ggc gct gag ctg cgt gcc aag gtc
ala asp val ala gly gln phe tyr thr leu asp gly ala ala glo leu arg ala lys val
601/201                               631/211
gag gcc ctc gag cat gcc cgg atc gct gtg gct atc gcc ggg gtg cgc ttc aaa tgc cca
glu ala leu glu his gly arg ile ala val ala ile ala gly val pro phe lys cys pro
661/221                               691/231
gcc gca cgc ttc gaa gcc gcc ttt ctg atc gcc gcc caa cta ggt gac cgc tac gcc acc
ala ala pro phe glu ala ala phe leu ile ala ala glu leu gly asp arg tyr ala thr
721/241                               751/251
gga acc gta cag atc gac acg ttc acg cct gac cgc ctg cgc atg acc gtt gca ggt ccc
gly thr val gln ile asp thr phe thr pro asp pro leu pro met pro val ala gly pro
781/261                               811/271
gag gtc gcc gag gct ttg gtc tgc atg ctc aag gat cac ggt gtc gcc ttc cat cct cgc
glu val gly glu ala leu val ser met leu lys asp his gly val gly phe his pro arg
841/281                               871/291
aag gcc cta gct cgc gtc gat gag gcc gca agg acg atg cac ttc ggt gac gcc acg tcc
lys ala leu ala arg val asp glu ala ala arg thr met his phe gly asp gly thr ser

```

SEQ ID N° 48F

FIGURE 48F

FEUILLE DE REMPLACEMENT (REGLE 26)

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901/301
 gaa cag ttc gat cag ctt gcc gtg gtc ccc cag cac gtg ccc tcc gcc gag gag cgg tca
 glu pro phe asp leu leu ala val val pro pro his val pro ser ala ala ala arg ser
 961/321
 gag gag ctc agc gaa tcc gag tgg ata ccc gtg gac cag cgc acc ctg tcc act agc gcc
 ala gly leu ser glu ser gly trp ile pro val asp pro arg thr leu ser thr ser ala
 1021/341
 gac aac gtg tgg gcc atc gcc gat gag acc gtg ctg acg ctg cag aat gcc aaa cag ctg
 asp asn val trp ala ile gly asp ala thr val leu thr leu pro asn gly lys pro leu
 1081/361
 ccc aag gct gcc gtg ttc gcc gaa gcc cag gcc gca gtt gtc gcc cac gcc gtc gcc cgc
 pro lys ala ala val phe ala glu ala gin ala ala val val ala his gly val ala arg
 1141/381
 cat ctc ggt tac gac gta gct gag cgc cac ttc acc gcc acg gcc gcc tgc tac gtc gag
 his leu gly tyr asp val ala glu arg his phe thr gly thr gly ala cys tyr val glu
 1201/401
 acc ggt gat cac cag gca gcc aag gcc gac gcc gat ttc ttc gct cag tog gag ccc tog
 thr gly asp his gin ala ala lys gly asp gly asp phe phe ala pro ser ala pro ser
 1261/421
 gtg acg ctg tac cag cag tog cag gag ttt cac gag gag aag gtc gca caa gaa ctg gcc
 val thr leu tyr pro pro ser arg glu phe his glu glu lys val ala gin glu leu ala
 1321/441
 tgg ctg acc cgc tgg aag acg tga
 trp leu thr arg trp lys thr CFA

SEQ ID N° 48F (suite)

FIGURE 48F (suite)

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Fragment amplifié par PCR d'après les similarités de séquences avec une sérine protéase de la famille htrA de *E. coli* (création du site BamHI à l'extrémité 5' et du site SnaBI à l'extrémité 3') et sous-cloné dans le vecteur pJVE0;

```

1/1                               31/11
cca tct aca ccg ctg aac agc cgg gcc aga cgc tgc cgg tcg gtg ctg ccg aga agg cgg
pro ser thr pro leu asn ser arg ala arg arg cys arg ser val leu pro arg arg arg
61/21                               91/31
tga tcc gtg gcg agt tgt tca tgt cgc ggc gca cca ccg ccg acc aac ggg tgc ttg cca
OPA ser val ala ser cys ser cys arg gly ala pro pro pro thr asn gly cys leu pro
121/41                               151/51
tcc gtc tga cca acg gta gtt cgc tgc tga tct cca aaa gtc tca agc cca ccg aag cag
ser val OPA pro thr val val arg cys OPA ser pro lys val ser ser pro pro lys gln
181/61                               211/71
tca tga aca agc tgc gtt ggc tgc tat tga tgc tgg gtg gga tgc ggg tgg cgg tgc ccg
ser OPA thr ser cys val gly cys tyr OPA ser trp val gly ser gly trp arg ser pro
241/81                               271/91
cgg tgg ccg ggg gga tgg tca ccc ggg ccg gcc tga gcc cgg tgg gcc gcc tca ccg aag
arg trp pro gly gly trp ser pro gly pro gly OPA gly arg trp ala ala ser pro lys
301/101                               331/111
cgg ccg agc ggg tgg cgc gaa ccg acg acc tgc gcc cca tcc ccg tct tgc gaa ggc acc
arg pro ser gly trp arg glu pro thr thr cys gly pro ser pro ser ser ala ala thr
361/121                               391/131
aat tgg cca gcc tga cag agg cat tca att taa tgc tgc ggg ccg tgg ccg agt cac ggg
asn trp pro gly OPA gln arg his ser ile OCH cys cys gly arg trp pro ser his gly
421/141                               451/151
aac gcc agg caa gcc tgg tta ccg aag ccg gac atg aat tgc gta ccc cgc taa cgt cgc
asn gly arg gln gly trp leu pro thr pro asp met asn cys val pro arg OCH arg arg
481/161                               511/171
tgc gca cca atg tgc aac tct tga tgg cct cga tgg ccc cgg ggg ctg tgc gcc tac cca
cys ala pro met ser asn ser OPA trp pro arg trp pro arg gly leu arg gly tyr pro
541/181                               571/191
agc agg aga tgg tgc acc tgc gtg ccg atg tgc tgg ctg aac tgc agg aat tgt cca cac
ser arg arg trp ser thr cys val pro met cys trp leu lys ser arg asn cys pro his
601/201                               631/211
tgg tag gcg att tgg tgg acc tgt ccc gag gcg aag ccg gag aag tgg tgc acg agc cgg
trp AMB ala ile trp trp thr cys pro glu ala thr pro glu lys trp cys thr ser arg
661/221                               691/231
tgc aca tgg ctg acc tgc tgc acc gca gcc tgg agc ggg tca gcc gcc gcc gcc acc ata
ser thr trp leu thr ser ser thr ala ala trp ser gly ser gly gly gly ala thr ile
721/241                               751/251
tcc ttt tgc acg tgc agg tga tgg ggt gcc agg ttt atg gcg ata ccg ctg gat tgt cgc
ser phe ser thr ser arg OPA leu gly gly arg phe met ala ile pro leu asp cys arg
781/261                               811/271
gga tgg cgc tta acc tga tgg aca acc ccg cga agt gga gcc cgc cgg gcg gcc acc tgg
gly trp arg leu thr OPA trp thr thr pro arg ser gly ala arg arg ala ala thr trp
841/281                               871/291
gtg tca gcc tga gcc agc tgc acg cgt cgc acc ctg agc tgg tgg ttt ccg acc gcg gcc
val ser gly OPA ala ser ser thr arg arg thr leu ser trp trp phe pro thr ala ala

```

SEQ ID N° 49A

FIGURE 49A

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901/301 931/311
 cgg gca ttc cag tgc agg agc gcc gtc tgg tgt tgg aac ggt ttt acc ggt cgg cat cgg
 arg ala phe pro cys arg ser ala val trp cys leu asn gly phe thr gly arg his arg
 961/321 991/331
 cag ggg cgt tgc cgg gtt cgg gcc tgg ggt tgg cga tgg tca aac agg tgg tgc tca acc
 his gly arg cys arg val arg ala ser gly trp arg ser ser asn arg trp cys ser thr
 1021/341 1051/351
 acg gag gat tgc tgc gca tgg aag aca cgg acc cag gag gcc agc ccc ctg gaa cgt cga
 thr ala asp cys cys ala ser lys thr pro thr gln ala ala ser pro leu glu arg arg
 1081/361 1111/371
 ttt aag tgc tgc tcc cag gcc gtc gga tgc cga ttc cgc agc ttc cag gtg cga cgg ctg
 phe thr cys cys ser pro ala val gly cys arg phe arg ser phe pro val arg arg leu
 1141/381 1171/391
 gag ctc gga gca cgg aca tgg aga act ctc ggg gtt cgg cga acg tta tct cag tgg aat
 ala leu gly ala arg thr ser arg thr leu gly val arg arg thr leu ser gln trp asn
 1201/401 1231/411
 ctc agt cca cgc gag caa cct agt tgt gca gtt act gtt gaa agc ccc acc cat gcc agt
 leu ser pro arg ala gln pro ser cys ala val thr val glu ser his thr his ala ser
 1261/421 1291/431
 cca cgc atg gcc aag tgg gcc cga gta gtg ggc cta gta cag gaa gag caa cct agc gac
 pro arg met ala lys leu ala arg val val gly leu val gln glu glu gln pro ser asp
 1321/441 1351/451
 atg acg aat cac cca cgg tat tgg cca cgg cag cag cgg gga acc cca ggt tat gct
 met thr asn his pro arg tyr ser pro pro pro gln gln pro gly thr pro gly tyr ala
 1381/461 1411/471
 cag ggg cag cag caa acg tac agc cag cag ttc gaa tgg cgt tac cca cgg tcc cgg ccc
 gln gly gln gln gln thr tyr ser gln gln phe asp trp arg tyr pro pro ser pro pro
 1441/481 1471/491
 cgg cag cca acc cag tac cgt caa ccc tac gag gag tgg ggt ggt acc cgg cgg ggt ctg
 pro gln pro thr gln tyr arg gln pro tyr glu ala leu gly gly thr arg pro gly leu
 1501/501 1531/511
 ata cct ggc gtg att cgg acc atg acg acc cct cct ggg arg gtt cgc caa cgc cct cgt
 ile pro gly val ile pro thr met thr pro pro pro gly met val arg gln arg pro arg
 1561/521 1591/531
 gca ggc atg ttg gcc atc ggc gag gtg acg ata ggc gtg gtg tcc gcc gcc atc gcc ggc
 ala gly met leu ala ile gly ala val thr ile ala val val ser ala gly ile gly gly
 1621/541 1651/551
 gag gcc gca tcc ctg gtc ggg ttc aac cgg gca ccc gcc gcc ccc agc ggc ggc cca gtc
 ala ala ala ser leu val gly phe asn arg ala pro ala gly pro ser gly gly pro val
 1681/561 1711/571
 gct gcc agc gag gag cca agc atc ccc gca gca aac atg cgg cgg ggg tgg gtc gaa cag
 ala ala ser ala ala pro ser ile pro ala ala asn met pro pro gly ser val glu gln
 1741/581 1771/591
 gbg gag gcc aag gtg gtg ccc agt gtc gtc atg tgg gaa acc gat ctg ggc cgc cag tgg
 val ala ala lys val val pro ser val val met leu glu thr asp leu gly arg gln ser
 1801/601 1831/611
 gag gag ggc tcc ggc atc att ctg tct gcc gag ggg ctg atc ttg acc aac aac cac gtc
 glu glu gly ser gly ile ile leu ser ala glu gly leu ile leu thr asn asn his val
 1861/621 1891/631
 atc gag gag gcc gcc aag cct ccc ctg ggc agt cgg cgg cgg aac acg acg gta
 ile ala ala ala ala lys pro pro leu gly ser pro pro pro lys thr thr val

SEQ ID N° 49A (suite 1)

FIGURE 49A (suite 1)

FEUILLE DE REMPLACEMENT (REGLE 26)

168/185

1/1 31/11
 cat cta cac cgc tca aca gcc ggg cca gac gct gcc ggt cgg tgc tgc cga gaa ggc ggt
 his leu his arg ser thr ala gly pro asp ala ala gly arg cys cys arg glu gly gly
 61/21 91/31
 gat cgg tgg cga gtt gtt cat gtc gcg gcg cac cac cgc cga cca acg ggt gct tgc cat
 asp pro trp arg val val his val ala ala his his arg arg pro thr gly ala cys his
 121/41 151/51
 ccg tct gac caa cgg tag ttc gct gct gat ctc caa aag tct caa gcc cac cga agc agt
 pro ser asp gln arg amc phe ala ala asp leu gln lys ser gln ala his arg ser ser
 181/61 211/71
 cat gaa caa gct gcg ttg ggt gct att gat cgt ggg tgg gat cgg ggt ggc ggt cgg cgg
 his gla gln ala ala leu gly ala ile asp arg gly trp asp arg gly gly gly arg arg
 241/81 271/91
 ggt gcc cgg ggg gat ggt cac ccg gcc cgg gct gag gcc ggt ggg ccg cct cac cga agc
 gly gly arg gly asp gly his pro gly arg ala glu ala gly gly pro pro his arg ser
 301/101 331/111
 gcc cga gcg ggt gcc gcg aac cga cga cct gcg gcc cat ccc cgt ctt cgg cag cga cga
 gly arg ala gly gly ala asn arg arg pro ala ala his pro arg leu arg gln arg arg
 361/121 391/131
 att gcc cag gct gac aga gcc att caa ttt aat gct gcg gcc gct ggc cga gtc acc gga
 ile gly gln ala asp arg gly ile gln phe asn ala ala gly ala gly arg val thr gly
 421/141 451/151
 acg gca gcc aag gct ggt tac cga cgc cgg aca tga att gcg tac ccc gct aac gtc gct
 thr ala gly lys ala gly tyr arg arg arg thr opa ile ala tyr pro ala asn val ala
 481/161 511/171
 gcg cac caa tgt cga act ctt gat gcc etc gat gcc ccc ggg gcc tcc gcg gct acc caa
 ala his gln cys arg thr leu asp gly leu asp gly pro gly gly ser ala ala thr gln
 541/181 571/191
 gca gga gat ggt cga cct gcg tgc cga tgt gct gcc tca aat cga gga att gtc cac act
 ala gly asp gly arg pro ala cys arg cys ala gly ser asn arg gly ile val his thr
 601/201 631/211
 ggt agg cga ttt ggt gga cct gcc ccg agg cga cgc cgg aga agt ggt gca cga gcc ggt
 gly arg arg phe gly gly pro val pro arg arg arg arg ser gly ala arg ala gly
 661/221 691/231
 cga cat gcc tga cgt cgt cga ccg cag cct gga gcc ggt cag gcc gcg gcc caa cga tat
 arg his gly opa arg arg arg pro gln pro gly ala gly gln ala ala ala gln arg tyr
 721/241 751/251
 cct ttt cga cgt cga ggt gat tgg gtg gca ggt tta tgg cga tac cgc tgg att gtc gcg
 pro phe arg arg arg gly asp trp val ala gly leu trp arg tyr arg trp ile val ala
 781/261 811/271
 gat gcc gct taa cct gat gga caa cgc cgc gaa gtg gag ccc gcc ggg cgg cca cgt ggg
 asp gly ala och pro asp gly gln arg arg glu val glu pro ala gly arg pro arg gly
 841/281 871/291
 tgt cag gct gag cca gct cga cgc gtc gca cgc tga gct ggt ggt ttc cga ccg cgg ccc
 cys gln ala glu pro ala arg arg val ala arg opa ala gly gly phe arg pro arg pro
 901/301 931/311
 ggg cat taa cgt gca gga gcg ccg tct ggt gtt tga aag gtt tta ccg gtc ggc atc ggc
 gly his ser arg ala gly ala pro ser gly val opa thr val leu pro val gly ile gly
 961/321 991/331
 acg gcc gtt gcc ggg ttc ggg cct ccg gtt ggc gat cgt cca aca ggt ggt gct caa cca
 thr gly val ala gly phe gly pro arg val gly asp arg gln thr gly gly ala gln pro
 1021/341 1051/351
 cgg cgg att gct gcg cat cga aga cac cga aac agg cgy cca gcc ccc tgg aac gtc gat
 arg arg ile ala ala his arg arg his arg pro arg arg pro ala pro trp asn val asp

SEQ ID N° 498

FEUILLE DE REMPLACEMENT (REGLE 26)

169/185

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1081/361      1111/371
tta cgt gat gat ccc cgg cgg tgg gat gcc gat tcc gca gct tcc cgg tgc gac gcc tgg
leu arg ala ala pro arg pro ser asp ala asp ser ala ala ser arg cys asp gly trp
1141/381      1171/391
cgc tgg gag ccc gga cat cga gaa ctc tgg ggg ttc ggc gaa cgt tat ctc agt gga atc
arg ser glu his gly his arg glu leu ser gly phe gly glu arg tyr leu ser gly ile
1201/401      1231/411
tca gtc cac ggg cgc aac cta gtt gtg cag tta ctg ttg aaa gcc aca ccc atg cca gtc
ser val his ala arg asn leu val val gln leu leu leu lys ala thr pro met pro val
1261/421      1291/431
cac gca tgg cca agt tgg ccc gag tag tgg gcc tag tac agg aag agc aac cta ggg aca
his ala trp pro ser trp pro glu AMB trp ala AMB tyr arg lys ser asn leu ala thr
1321/441      1351/451
tga cga atc acc cac ggt att cgc cac cgc cgc agc agc cgg gaa ccc cag gtt atg ctc
OPA arg ile thr his gly ile arg his arg arg ser ser arg glu pro gln val met leu
1381/461      1411/471
agg ggc agc agc aaa cgt aca gcc agc agt tgg acc ggc gtt acc cac cgt ccc cgc ccc
arg gly ser ser lys arg thr ala ser ser ser thr gly val thr his arg pro arg pro
1441/481      1471/491
cgc agc caa ccc agt acc gtc aac cct acg agg cgt tgg gtg gta ccc ggc egg gtc tga
arg ser gln pro ser thr val asn pro thr arg arg trp val val pro gly arg val OPA
1501/501      1531/511
tac ctg gcg tga ttc cga cca tga cgc ccc ctc ctg gga tgg ttc gcc aac gcc ctc gtg
tyr leu ala OPA phe arg pro OPA arg pro leu leu gly trp phe ala asn ala leu val
1561/521      1591/531
cag gca tgt tgg cca tgg gcg cgg tga cga tag cgg tgg tgt cgg ccg gca tgg gcg ggg
gln ala cys trp pro ser ala arg OPA arg AMB arg trp cys pro pro ala ser ala ala
1621/541      1651/551
cgg cgg cat ccc tgg tgg ggt tca acc ggg cac ctg cgg gcc cca ggg gcg gcc cag tgg
arg pro his pro trp ser gly ser thr gly his pro pro ala pro ala ala ala gln trp
1681/561      1711/571
ctg cca gcg cgg cgc caa gca tcc ccg cag cca aca tgc cgc cgg ggt cgg tgg aac agg
leu pro ala arg arg gln ala ser pro gln gln thr cys arg arg gly arg ser asn arg
1741/581      1771/591
tgg cgg cca agg tgg tgc cca gtg tgg tca tgt tgg aaa ccg atc tgg gcc gcc agt cgg
trp arg pro arg trp cys pro val ser ser cys trp lys pro ile trp ala ala ser arg
1801/601      1831/611
agg agg gct ccg gca tca ttc tgt ctg ccg agg ggc tga tct tga cca aca acc acg tga
arg arg ala pro ala ser phe cys leu pro arg gly OPA ser OPA pro thr thr thr OPA
1861/621      1891/631
tcg cgg cgg ccg cca agc ctc ccc tgg gca gtc cgc cgc cga aaa cga cgg ta
ser arg arg pro pro ser leu pro trp ala val arg arg arg lys arg arg

```

SEQ ID N° 49B (suite 1)

FIGURE 49B (suite 1)

170/185

1/1 31/11
 atc tac aac gct caa cag ccg gcc cag acg ctg ccg gtc ggt get ggc gag aag gag gtg
 ile tyr thr ala gln gln pro gly gln thr leu pro val gly ala ala glu lys ala val
 61/21 91/31
 atc cgt gcc gag ttg ttc atg tgg cgg cgc acc acc gcc gac caa cgg gtg ctt gcc atc
 ile arg gly glu leu phe met ser arg arg thr thr ala asp gln arg val leu ala ile
 121/41 151/51
 cgt ctg acc aac ggt agt tgg ctg ctg atc tcc aac agt ctg aag ccc acc gaa gca gtc
 arg leu thr asn gly ser ser leu leu ile ser lys ser leu lys pro thr glu ala val
 181/61 211/71
 atg aac aag ctg cgt tgg gtg cta ttg atc gtg ggt ggg atc ggg gtg gcg gtc gcc gcg
 met asn lys leu arg trp val leu leu ile val gly gly ile gly val ala val ala ala
 241/81 271/91
 gtg gcc ggg ggg atg gtc acc cgg gcc ggg ctg agg ccg gtg gcc cgc ctg acc gaa gcg
 val ala gly gly met val thr arg ala gly leu arg pro val gly arg leu thr glu ala
 301/101 331/111
 gcc gag cgg gtg gcg cga acc gac gac ctg cgg ccc atc ccc gtc ttc gcc agc gac gaa
 ala glu arg val ala arg thr asp asp leu arg pro ile pro val phe gly ser asp glu
 361/121 391/131
 ttg gcc agg ctg aca gag gca ttc aat tta atg ctg cgg gcg ctg gcc gag tca cgg gaa
 leu ala arg leu thr glu ala phe asn leu met leu arg ala leu ala glu ser arg glu
 421/141 451/151
 cgg cag gca agg ctg gtt acc gac gcc gga cat gaa ttg cgt acc ccg cta acg tgg ctg
 arg gln ala arg leu val thr asp ala gly his glu leu arg thr pro leu thr ser leu
 481/161 511/171
 cgc acc aat gtc gaa ctg ttg atg gcc tgg atg gcc ccg ggg get ccg cgg cta ccc aag
 arg thr asn val glu leu leu met ala ser met ala pro gly ala pro arg leu pro lys
 541/181 571/191
 cag gag atg gtc gac ctg cgt gcc gat gty ctg gct caa acc gag gaa ttg tcc acc ctg
 gln glu met val asp leu arg ala asp val leu ala gln ile glu glu leu ser thr leu
 601/201 631/211
 gta gcc gat ttg gtg gac ctg tcc cga gcc gac gcc gga gaa gta gta cac gag ccg gtc
 val gly asp leu val asp leu ser arg gly asp ala gly glu val val his glu pro val
 661/221 691/231
 gac atg gct gac gtc gtc gac cgc agc ctg gag cgg gtc agg cgg cgg cgc aac gat atc
 asp met ala asp val val asp arg ser leu glu arg val arg arg arg arg asn asp ile
 721/241 751/251
 ctt ttc gac gtc gag gtg att ggg tgg cag gtt tat gcc gat acc get gga ttg tgg cgg
 leu phe asp val glu val ile gly trp gln val tyr gly asp thr ala gly leu ser arg
 781/261 811/271
 atg ggg ctt aac ctg atg gac aac gcc ggg aag tgg agc ccg ccg ggc gcc cac gtg ggt
 met ala leu asn leu met asp asn ala ala lys trp ser pro pro gly gly his val gly
 841/281 871/291
 gtc agg ctg agc cag ctg gac gcc tgg cac gct gag ctg gtg gtt tcc gac cgc gcc ccg
 val arg leu ser gln leu asp ala ser his ala glu leu val val ser asp arg gly pro
 901/301 931/311
 gcc att ccc gtg cag gag cgc cgt ctg gtg ttt gaa cgg ttt tac cgg tgg gca tgg gca
 gly ile pro val gln glu arg arg leu val phe glu arg phe tyr arg ser ala ser ala
 961/321 991/331
 cgg ggg ttg ccg ggt tgg gcc ctg ggg ttg gcg atc gtc aac cag gtg gtg ctg aac cac
 arg ala leu pro gly ser gly leu gly leu ala ile val lys gln val val leu asn his

SEQ ID N° 49C

FIGURE 49C
 FEUILLE DE REMPLACEMENT (REGLE 26)

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1021/341 1031/351
 ggc gga ttg ctg cgc atc gaa gac acc gac cca ggc ggc cag ccc cct gga asg tog att
 gly gly leu leu arg ile glu asp thr asp pro gly gly gln pro pro gly thr ser ile
 1081/361 1111/371
 tac gtg ctg ctc ccc ggc cgt cgg atg ccg att ccg cag ctt ccc ggt ggc acg gct ggc
 tyr val leu leu pro gly arg arg met pro ile pro gln leu pro gly ala thr ala gly
 1141/381 1171/391
 gct cgg agc acg gac atc gag aac tct cgg ggt tgg ggc aac gtt atc tca gtg gaa tct
 ala arg ser thr asp ile glu asn ser arg gly ser ala asn val ile ser val glu ser
 1201/401 1231/411
 cag tcc acg cgc gca acc tag ttg tgc agt tac tgt tga aag cca cac cca tgc cag tcc
 gln ser thr arg ala thr AMS leu cys ser tyr cys CPA lys pro his pro cys gln ser
 1261/421 1291/431
 acg cat ggc caa gtt ggc ccg agt agt ggg cct agt aca gga aga gca acc tag cga cat
 thr his gly gln val gly pro ser ser gly pro ser thr gly arg ala thr AMS arg his
 1321/441 1351/451
 gac gaa tca ccc acg gta ttc gcc acc gcc gca gca gcc ggg aac cca agg tta tgc tca
 asp glu ser pro thr val phe ala thr ala ala ala ala gly asn pro arg leu cys ser
 1381/461 1411/471
 ggg gca gca gca aac gta cag cca gca gtt cga ctg ggc tta ccc acc gtc ccc gcc ccc
 gly ala ala ala asn val gln pro ala val arg leu ala leu pro thr val pro ala pro
 1441/481 1471/491
 gca gcc aac cca gta ccg tca acc cta cga ggc gtt ggg tgg tac ccg gcc ggg tct gat
 ala ala asn pro val pro ser thr leu arg gly val gly trp tyr pro ala gly ser asp
 1501/501 1531/511
 acc tgg cgt gat tcc gac cat gac gcc ccc tcc tgg gat ggt tog cca acg ccc tog tgc
 thr trp arg asp ser asp his asp ala pro ser trp asp gly ser pro thr pro ser cys
 1561/521 1591/531
 agg cat gtt ggc cat cgg cgc ggt gac gat agc ggt ggt gtc cgc cgg cat cgg cgg cgc
 arg his val gly his arg arg gly asp asp ser gly gly val arg arg his arg arg arg
 1621/541 1651/551
 ggc cgc atc cct ggt cgg gtt caa ccg gcc acc cgc cgg ccc cag cgg cgg ccc agt gcc
 gly arg ile pro gly arg val gln pro gly thr arg arg pro gln arg arg pro ser gly
 1681/561 1711/571
 tgc cag cgc ggc gcc aag cat ccc cgc agc aaa cat gcc gcc ggg gtc ggt cga aca ggt
 cys gln arg gly ala lys his pro arg ser lys his ala ala gly val gly arg thr gly
 1741/581 1771/591
 ggc ggc caa ggt ggt gcc cag tgt cgt cat gtt gga aac cga tct ggg ccg cca gtc gga
 gly gly gln gly gly ala gln cys arg his val gly asn arg ser gly pro pro val gly
 1801/601 1831/611
 gga ggg ctc cgg cat cat tct gtc tgc cga ggg gct gat ctt gac caa caa cca cgt gat
 gly gly leu arg his his ser val cys arg gly ala asp leu asp gln gln pro arg asp
 1861/621 1891/631
 cgc ggc ggc cgc caa gcc tcc cct ggg cag tcc gcc gcc gaa aac gac ggt a
 arg gly gly arg gln ala ser pro gly gln ser ala ala glu asn asp gly

SEQ ID N° 49C (suite 1)

FIGURE 49C (suite 1)

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Séquence codante Rv0983 prédite par Cole et al., 1998 (Nature 393:537-544) et contenant seq50A:

```

1/1                               31/11
atg gcc aag ttg gcc cga gta gtg ggc cta gta cag gaa gag caa cct agc gac atg aag
Met ala lys leu ala arg val val gly leu val gln glu glu pro ser asp met thr
61/21                               91/31
aat cac cca cgg tat tgg cca cgg ccg cag cag ccg gga acc cca ggt tat gct cag ggg
asn his pro arg tyr ser pro pro pro gln gln pro gly thr pro gly tyr ala gln gly
121/41                               151/51
cag cag caa acg tac agc cag cag ttc gac tgg cgt tac cca ccg tcc ccg ccc ccg cag
gln gln gln thr tyr ser gln gln phe asp trp arg tyr pro pro ser pro pro pro gln
181/61                               211/71
cca acc cag tac cgt caa ccc tac gag gcg ctg ggt ggt acc cgg ccg ggt ctg ata cct
pro thr gln tyr arg gln pro tyr glu ala leu gly gly thr arg pro gly leu ile pro
241/81                               271/91
ggc gtg att ccg acc atg acg ccc cct cct ggg atg gtt cgc caa cgc cct cgt gca ggc
gly val ile pro thr met thr pro pro pro gly met val arg gln arg pro arg ala gly
301/101                               331/111
atg ttg gcc atc ggc gcg gtg acg ata gcg gtg gtg tcc gcc ggc atc ggc ggc gcg gcc
met leu ala ile gly ala val thr ile ala val val ser ala gly ile gly gly ala ala
361/121                               391/131
gca tcc ctg gtc ggg ttc aac cgg gca ccc gcc ggc ccc agc ggc ggc cca gtg gct gcc
ala ser leu val gly phe asn arg ala pro ala gly pro ser gly gly pro val ala ala
421/141                               451/151
agc gcg gag cca agc atc ccc gca gca aac atg ccg ccg ggg tgg gtc gaa cag gtg gcg
ser ala ala pro ser ile pro ala ala asn met pro pro gly ser val glu gln val ala
481/161                               511/171
gcc aag gtg gtg ccc agt gtc gtc atg ttg gaa acc gat ctg ggc cgc cag tgg gag gag
ala lys val val pro ser val val met leu glu thr asp leu gly arg gln ser glu glu
541/181                               571/191
ggc tcc ggc atc att ctg tct gcc gag ggg atg atc ttg acc aac aac cac gtg atc gcg
gly ser gly ile ile leu ser ala glu gly leu ile leu thr asn asn his val ile ala
601/201                               631/211
gcg gcc gcc aag cct ccc ctg gcc agt ccg ccg ccg aaa acg acg gta acc ttc tct gac
ala ala ala lys pro pro leu gly ser pro pro pro lys thr thr val thr phe ser asp
661/221                               691/231
ggg cgg acc gca ccc ttc acg gtg gtg ggg gct gac ccc acc agt gat atc gcc gtc gtc
gly arg thr ala pro phe thr val val gly ala asp pro thr ser asp ile ala val val
721/241                               751/251
cgt gtt cag gcc gtc tcc ggg atc acc ccg atc tcc ctg ggt tcc tcc tgg gac ctg agg
arg val gln gly val ser gly leu thr pro ile ser leu gly ser ser ser asp leu arg
781/261                               811/271
gtc ggt cag ccg gtg ctg gcg atc ggg tgg ccg ctc ggt ttg gag ggc acc gtg acc acg
val gly gln pro val leu ala ile gly ser pro leu gly leu glu gly thr val thr thr

```

SEQ ID N° 49D

FIGURE 49D

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641/281 871/291
 ggg atc gtc agc gct ctc aac cgt cca gtg tgg acc acc ggc gag gcc ggc aac cag aac
 gly ile val ser ala leu asn arg pro val ser thr thr gly glu ala gly asn gln asn
 901/301 931/311
 acc gtg ctg gcc gcc att cag acc gac gcc gcc atc aac acc ggt aac tcc ggg gcc gcc
 thr val leu asp ala ile gln thr asp ala ala ile asn pro gly asn ser gly gly ala
 961/321 991/331
 ctg gtg aac arg aac gct cca ctc gtc gga gtc aac tgg gcc att gcc acg ctg gcc gcc
 leu val asn met asn ala gln leu val gly val asn ser ala ile ala thr leu gly ala
 1021/341 1051/351
 gac tca gcc gat gcc cag agc gcc tgg atc ggt ctc ggt ttc gcc att cca gtc gac cag
 asp ser ala asp ala gln ser gly ser ile gly leu gly phe ala ile pro val asp gln
 1081/361 1111/371
 gcc aag cgc atc gcc gac gag ttg atc agc acc gcc aag gcc tca cat gcc tcc ctg ggt
 ala lys arg ile ala asp gln leu ile ser thr gly lys ala ser his ala ser leu gly
 1141/381 1171/391
 gtg cag gtg acc aat gac aaa gac acc ctg gcc gcc aag atc gtc gaa gta gtg gcc ggt
 val gln val thr asn asp lys asp thr leu gly ala lys ile val glu val val ala gly
 1201/401 1231/411
 ggt gct gcc gcc aac gct gga gtg ccg aag gcc gtc gtt gtc acc aag gtc gac gac cgc
 gly ala ala ala asn ala gly val pro lys gly val val val thr lys val asp asp arg
 1261/421 1291/431
 ccg atc aac agc gcc gac gcc ttg gtt gcc gcc gtg cgg tcc aaa gcc ccg gcc gcc acc
 pro ile asn ser ala asp ala leu val ala ala val arg ser lys ala pro gly ala thr
 1321/441 1351/451
 gtg gcc cta acc ttt cag gat ccc tgg gcc ggt agc cgc aca gtg cca gtc acc ctc gcc
 val ala leu thr phe gln asp pro ser gly gly ser arg thr val gln val thr leu gly
 1381/461
 aag gcc gag cag tga
 lys ala glu gln CFA

SEQ ID N° 49D (suite 1)

FIGURE 49D (suite 1)

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OSF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Sv0983

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1/1                               31/11
tga gcc agc tag acg cgt cgc acg ctg agc tgg tgg ttt ccg acc gag gcc cgg gca ttc
OPA ala ser ser thr arg arg thr leu ser trp trp phe pro thr ala ala arg ala phe
61/21                               81/31
ccg tgc agg agc gcc gtc tgg tgt ttg aac ggt ttt acc ggt cgg cat cgg cac ggg cgt
pro cys arg ser ala val trp cys leu asn gly phe thr gly arg his arg his gly arg
121/41                               151/51
tgc cgg gtt cgg gcc tgc ggt tgg cga tgc tca aac agg tgg tgc tca acc acg gag gat
cys arg val arg ala ser gly trp arg ser ser asn arg trp cys ser thr thr ala asp
181/61                               211/71
tgc tgc gca tgc aag aca ccg acc cag gag gcc agc ccc ctg gaa cgt cga ttt acg tgc
cys cys ala ser lys thr pro thr gln ala ala ser pro leu glu arg arg phe thr cys
241/81                               271/91
tgc tcc ccg gcc gtc gga tgc cga ttc cys agc ttc ccg gtg cga cgg ctg gag ctg gga
cys ser pro ala val gly cys arg phe arg ser phe pro val arg arg leu ala leu gly
301/101                               331/111
gca cgg aca tgc aga act ctg ggg gtt cgg cga acg tta tcc cag tgg aat ctc agt cca
ala arg thr ser arg thr leu gly val arg arg thr leu ser gln trp asn leu ser pro
361/121                               391/131
cgc gag caa cct agt tgt gca gtt act gtt gaa agc cac acc cat gcc agt cca cgc atg
arg ala gln pro ser cys ala val thr val glu ser his thr his ala ser pro arg met
421/141                               451/151
gcc aag ttg gcc cga gta gtg ggc cta gta cag gaa gag caa cct agc gac atg acg aat
ala lys leu ala arg val val gly leu val gln glu glu gln pro ser asp met thr asn
481/161                               511/171
cac cca cgg tat tag cca ccg ccg cag cag ccg gga acc cca ggt tat gct cag ggg cag
his pro arg tyr ser pro pro pro gln gln pro gly thr pro gly tyr ala gln gly gln
541/181                               571/191
cag caa acg tac agc cag cag ttc gac tgg cgt tac cca ccg tcc ccg ccc ccg cag cca
gln gln thr tyr ser gln gln phe asp trp arg tyr pro pro ser pro pro pro gln pro
601/201                               631/211
acc cag tac cgt caa ccc tac gag gag ttg ggt ggt acc cgg ccg ggt ctg ata cct ggc
thr gln tyr arg gln pro tyr glu ala leu gly gly thr arg pro gly leu ile pro gly
661/221                               691/231
gtg att ccg acc atg acg ccc cct cct ggg atg gtt cgc caa cgc cct cgt gca ggc atg
val ile pro thr met thr pro pro pro gly met val arg gln arg pro arg ala gly met
721/241                               751/251
ttg gcc atc ggc gag gtg acg ata ggc gtg gtg tcc gcc ggc atc ggc ggc ggc gcc gca
leu ala ile gly ala val thr ile ala val val ser ala gly ile gly gly ala ala ala
781/261                               811/271
tcc ctg gtc ggg ttc aac cgg gca ccc ggc ggc ccc agc ggc ggc cca gtg gct gcc agc
ser leu val gly phe asn arg ala pro ala gly pro ser gly gly pro val ala ala ser
841/281                               871/291
gcy gcy cca agc atc ccc gca gca aac atg ccg ccg ggg tgc gtc gaa cag gtg ggc gcc
ala ala pro ser ile pro ala ala asn met pro pro gly ser val glu gln val ala ala

```

SEQ ID N° 49F

FIGURE 49F

175/185

901/301
 aag gtg gtg ccc agt gtc gtc atg ttg gaa acc gat ctg ggc cgc cag tgg gag gag ggc
 lys val val pro ser val val met leu glu thr asp leu gly arg gln ser glu glu gly
 901/321
 tcc ggc atc att ctg tct gcc gag ggg ctg atc ttg acc aac aac cag gtg atc ggc ggc
 ser gly ile ile leu ser ala glu gly leu ile leu thr asn asn his val ile ala ala
 1021/341
 gcc gcc aag cct ccc ctg gcc agt cgg ccg ccg aaa acg acg gta acc tta tct gac ggc
 ala ala lys pro pro leu gly ser pro pro pro lys thr thr val thr phe ser asp gly
 1081/361
 cgg acc gca ccc tta acg gtg gtg ggg gct gac acc acc agt gat acg gcc gtc gtc cgt
 arg thr ala pro phe thr val val gly ala asp pro thr ser asp ile ala val val arg
 1141/381
 gtt cag gcc gtc tcc ggg ctg acc ccg atc tcc ctg ggt tcc tcc tgg gac ctg agg gtc
 val gln gly val ser gly leu thr pro ile ser leu gly ser ser ser asp leu arg val
 1201/401
 ggt cag ccg gtg ctg gcc atc ggg tgg ccg ctg ggt ttg gag gcc acc gtg acc acg ggc
 gly gln pro val leu ala ile gly ser pro leu gly leu glu gly thr val thr thr gly
 1261/421
 atc gtc agc gct ctg aac cgt cca gtg tgg acc acc gcc gag gcc gcc aac cag aac acc
 ile val ser ala leu asn arg pro val ser thr thr gly glu ala gly asn gln asn thr
 1321/441
 gtg ctg gac gcc att cag acc gac gcc gcc atc aac ccc ggt aac tcc ggg gcc gcc ctg
 val leu asp ala ile gln thr asp ala ala ile asn pro gly asn ser gly gly ala leu
 1381/461
 gtg aac atg aac gtt cca ctg gtc gga gtc aac tgg gcc att gcc aag ctg gcc gcc gac
 val asn met asn ala gln leu val gly val asn ser ala ile ala thr leu gly ala asp
 1441/481
 tca gcc gat gcc cag agc gcc tgg atc ggt ctg ggt ttt gcc att cca gtc gac cag gcc
 ser ala asp ala gln ser gly ser ile gly leu gly phe ala ile pro val asp gln ala
 1501/501
 aag cgc atc gcc gcc gag ttg atc agc acc gcc aag gcc tca cat gcc tcc ctg ggt gtc
 lys arg ile ala asp glu leu ile ser thr gly lys ala ser his ala ser leu gly val
 1561/521
 cag gtg acc aat gac aaa gac acc ctg gcc gcc aag atc gtc gaa gta gtg gcc ggt ggt
 gln val thr asn asp lys asp thr leu gly ala lys ile val glu val val ala gly gly
 1621/541
 gct gcc gcc aac gct gga gtg ccg aag gcc gtc gtt gtc acc aag gtc gac gac cgc ccg
 ala ala ala asn ala gly val pro lys gly val val val thr lys val asp asp arg pro
 1681/561
 atc aac agc gcc gac gcc ctg gtt gcc gcc gtg cgg tcc aaa gcc ccg gcc gcc acc gtc
 ile asn ser ala asp ala leu val ala ala val arg ser lys ala pro gly ala thr val
 1741/581
 gcc ctg acc ttt cag gat ccc tgg gcc ggt agc cgc aca gtg cca gtc acc ctg gcc aag
 ala leu thr phe gln asp pro ser gly gly ser arg thr val gln val thr leu gly lys
 1801/601
 gcc gag cag tga
 ala glu gln opa

SEQ ID N° 49F (suite 1)

FIGURE 49F (suite 1)

FEUILLE DE REMPLACEMENT (REGLE 26)

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Fragment amplifié par PCR d'après les similarités de séquence avec une sérine protéase de la famille HTRA de *E. coli* (création du site SnaBI à l'extrémité 3') et sous cloné dans le vecteur p3VEDa:

```

1/1
gat ccc ggc ggc cgg gtc tgc ggc cag ggc tgg ctg ggc gtc acc ggc gtc cgg ggc gtc
asp pro ala gly arg val ser ala gln ala trp leu ala val thr ala val arg ala val
61/21
ccc ccc ggc tct cgg ggc ccc ggc ggc ggc gtc gca atg ggc gga acc ggc ccc atg cca
pro pro gly cys gly ala pro ala ala ala val ala met ala gly thr ala pro ser pro
121/41
aca tgc tca ggc gtc gag acc gtc gcc tgc ggc gtc ccc gtc ggc gtc ggc gat gcc tct
thr ser ser ala val glu thr val ala ser ala val pro val ala val ala asp gly ser
181/61
acc ggc acc ggc ggc ccc ggc gac acc ggc gac acc ggc cca tgc gcc tgc ggc ggc ggc
thr ala thr ala gly pro ala asp thr ala asp lys ala gln ser ala ser ala ala ala
241/81
ccc ggc ggc acc ggc gcc acc ggc ggc ccc gcc ggc gac tgc ggc gta ctc ggc ggc ccc
pro ala ala thr gly ala arg ala ala pro ala ala asp cys gly val leu ala ala pro
301/101
ggc gac acc ggc gcc acc ggc gtc gta ccc gcc gcc ccc acc gcc tgc ccc gtc acc gac gca
ala asp thr ala gly lys ala val val pro gly ala his arg cys pro val arg gln ala
361/121
tgc ggc ccc cgc gtc gcc ccc gtc gcc tga tgc gca acc ggc ggc ccc ggc ggc acc ggc
trp ala pro arg val ala pro val gly opa ser ala thr ala gly pro ala ala thr ala
421/141
gtg tgc ggc cgt ccc ggc ggc tgc ccc gag tag ggc gtc ccc ggc gga acc cca tgc tga
val ser ala arg pro ala gly ser pro glu amc ala val pro ala gly thr pro cys opa
481/161
tgc ggc acc ggc ggc ccc ggc ggc ccc ggc gag aca gca gtt tgc cta atg ggc cgc ccc
ser gly thr ala ala pro ala ala pro ala glu thr ala val ser leu met ala arg pro
541/181
ggc ggc cgc ggc gtc ccc gag gcc acc tct tgc gca atg ggc ggt ccc ggc gcc acc ggc
ala ala arg ala val pro glu gly thr ser ser ala met ala gly pro ala ala thr ala
601/201
gag ccc tca cgc ccc gca acc ccc gta tgc gtc ggc ccc ggc ggc tgc gtc ggc acc cca
glu pro ser arg pro ala thr pro val ser val ala pro ala ala ser val gly thr pro
661/221
ggc tga tgc gcc acc gtc gcc ccc ggc gtc ccc ggc ggc acc ggc ccc gag cct tgc ttc
gly opa ser ala thr val ala pro ala val pro ala gly thr ala pro glu pro trp leu
721/241
gcc gtc acc ggc gcc ccc gtc gga acc ggc ggc ctg gcc gcc acc tgc acc gca acc ggc
ala val thr ala gly pro val gly thr gly ala leu ala ala ser tyr thr ala thr ala
781/261
ggc acc ggc ccc ccc gca ccc ggc gaa ccc tgc acc cgc ccc tga ggc gat tgc tga cgc
ala thr ala pro pro ala pro ala glu his cys arg arg arg opa ala asp trp opa arg
841/281
cct tgc tgc gtc ccc ccc gcc acc ccc ggc acc ccc gcc acc ccc gcc acc ccc gcc ccc
leu cys ser val his pro ala asn pro ala thr pro ala asn pro ala ser pro asp gln
901/301
cga ggc ttc cgc tgc cgc tcc ggc gca tgc cca tcc gct gag ctg ggc atc tgc acc acc
arg gly phe acc cys arg ser gly ala trp pro ser ala glu leu ala ile trp thr thr
961/321
ttg gtc tag aca acc cct gcc gcc ccc acc ctt acc gct ggc acc atc tct gat acc acc
leu val amc lys asn pro ala ala arg thr leu lys ala gly thr ile ser asp ser tyr
1021/341
ccc gac aca gga ggt tac ggc atg acc aat tgc cgc cgc cgc tca ctc acc tgc tca tgc
pro asp thr gly gly tyr gly met ser asn ser arg arg arg ser leu arg trp ser trp
1081/361
ttg ctg acc gtc cgc gct gcc gtc ggc ctg gcc ctg gcc acc ggc ccc gcc acc ggc gcc
leu leu ser val leu ala ala val gly leu gly leu ala thr ala pro ala gln ala ala
1141/381
ccc ccc gcc tgc tgc ccc gcc ccc tc
pro pro ala leu ser gln asp arg

```

SEQ ID N° 50A

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 50A

177/185

1/1 31/11
 atc cgg cgg ggc ggg tgt cgg cgc agg cgt ggc tgg cgg tca cgg cgg tgc ggg cgg tgc
 ile arg arg gly gly cys arg arg arg arg gly trp arg ser arg arg cys gly arg cys
 61/21 91/31
 cgc cgg gct gtg ggg cgc cgg cgg cgg cgg cgg cgg cga tgg cgg gaa cgg cgc cga tgc caa
 arg arg ala val gly arg arg arg arg arg trp gln trp arg glu arg arg arg cys gln
 121/41 131/51
 cat cgt cag cgg tgg aga cgg tgg cct cgg cgg tgc cgg tgg cgg tgg cgg atg gct cta
 his arg gln arg trp arg arg trp pro arg arg cys arg trp arg trp arg met ala leu
 181/61 211/71
 cgg cga cgg cgg ggc cgg cgg aca cgg cgg aca cgg cgc aat cgg cct cgg cgg cgg cgg
 arg arg arg arg gly arg arg thr arg arg thr arg arg asn arg pro arg arg arg arg
 241/81 271/91
 cgg cgg cga cgg ggg cca ggg cgg cgc cgg cgg cgg act gtc ggg tac tgg cgg cgg cgg
 arg arg arg arg gly pro gly arg arg arg pro arg thr val gly tyr trp arg arg arg
 301/101 331/111
 cgg aca cgg cgg gca agg cgg tgg tac cgg ggg cgc acc gct gcc cgg tca ggc agg cat
 arg thr arg arg ala arg arg trp tyr arg gly pro thr ala ala arg ser gly arg his
 361/121 391/131
 ggg cgc cgc ggg tgg cgc cgg tgg gct gat cgg cga cgg cgg ggc cgg cgg cga cgg cgg
 gly arg arg gly trp arg arg trp ala asp arg gln arg arg gly arg arg arg arg arg
 421/141 451/151
 tgc cgg cgc gtc cgg cgg ggt cgc cgg agt cgg cgg tgc cgg cgg gaa cgc cat gct gat
 cys arg arg val arg arg gly arg arg ser arg arg cys arg arg glu arg his ala asp
 481/161 511/171
 cgg gca cgg cgg cgc cgg cgg cgc cgg cgg aga cag cag ttt cgc taa tgg cgc ggc cgg
 arg ala arg arg arg arg arg arg arg arg arg gln gln phe arg och trp arg gly arg
 541/181 571/191
 cgg cgc ggg cgg tgc cgg agg gca cct ctt cgg caa tgg cgg gtc cgg cgg cca cgg cgg
 arg arg gly arg cys arg arg ala pro leu arg gln trp arg val arg arg pro arg arg
 601/201 631/211
 agc cgt cac ggc cgg caa cac cgg tat cgg tgg cgc cgg cgg cgt cgg tgg gga cgc cag
 ser arg his gly arg gln his arg tyr arg trp arg arg arg arg arg trp gly arg gln
 661/221 691/231
 gct gat cgg cca cgg tgg cgc cgg cgg tgc cgg cgg gga cgg cgc cgg arg ctt ggt tgg
 ala asp arg pro arg trp arg arg arg cys arg arg gly pro arg arg ser leu gly trp
 721/241 751/251
 ccg tga cgg cgg gcc cgg tgg gaa cgg ggg cgc tgg cgg cca gct ata cgg caa cgg cgg
 pro cpa arg arg ala arg trp glu arg gly arg trp arg pro ala ala arg gln arg arg
 781/261 811/271
 cga cgg cgc ccc cgg cac cgg cgg aac act gca ggc ggc ggt gag cgg att ggt gac ggc
 arg arg arg pro arg his arg arg asn thr ala gly gly gly glu arg ile gly asp gly
 841/281 871/291
 ttt gtt cgg tgc acc cgg cca acc cgg cga cac cgg cca acc cgg cta gcc cgg atc aac
 phe val arg cys thr arg pro thr arg arg his arg pro thr arg leu ala pro ile asn
 901/301 931/311
 gag ggt ttc ggt gcc ggt cgg ggg cat ggc cat cgg ctg agc tgg cga tct gga cta cgt
 glu gly phe gly ala gly pro gly his gly his pro leu ser trp arg ser gly leu arg
 961/321 991/331
 tgg tgt aga aaa atc ctg ccg ccc gga ccc tta agc ctg gga caa ttt ctg ata gct acc
 trp cys arg lys ile leu pro pro gly pro leu arg leu gly gln phe leu ile ala thr
 1021/341 1051/351
 ccg aca cag gag gtt acg gga tga gca att cgc gcc gcc gct cac tca ggt ggt cat ggt
 pro thr gln glu val thr gly cpa ala ile arg ala ala ala his ser gly gly his gly
 1081/361 1111/371
 tgc tga ggc tgc tgg ctc cgg tgc ggc cgg gcc tgg cca cgg cgc cgg ccc agg cgg ccc
 cys cga ala cys trp leu pro ser gly trp ala trp pro arg arg arg pro arg arg pro
 1141/381
 cgc cgg cct tgt cgc agg acc ggt t
 arg arg pro cys arg arg thr gly

SEQ ID N° 50B

FIGURE 50B
 FEUILLE DE REMPLACEMENT (RÈGLE 26)

178/185

1/1 31/11
 tcc gcc ggg ggc ggt gtc gcc gca gcc gtg gcc gcc ggt ccc gcc ggt ggc gcc ggt gcc
 ser gly gly ala gly val gly ala gly val ala gly gly his gly gly ala gly gly ala
 61/21 91/31
 gcc ggg ctg tag gcc gcc gcc gcc gcc ggt gcc aat gcc ggg aac gcc gcc gat gcc aac
 ala gly leu trp gly ala gly gly gly gly gly aen gly gly aen gly ala asp ala aen
 121/41 151/51
 atc gtc agc ggt gga gac ggt gcc ctc gcc ggt gcc ggt gcc ggt gcc gga tgg ctc tac
 ile val ser gly gly asp gly gly leu gly gly ala gly gly gly gly gly trp leu tyr
 181/61 211/71
 gcc gcc gcc ggg gcc gcc gga ccc gcc gga ccc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 gly asp gly gly ala gly gly his gly gly gln gly ala ile gly leu gly gly gly ala
 241/81 271/91
 gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 gly gly asp gly gly gln gly gly ala gly arg gly leu trp gly thr gly gly ala gly
 301/101 331/111
 gga ccc gcc ggg cca gcc ggt ggt acc gcc gcc cca ccc ctg ccc ggt cag gca gcc atg
 gly his gly gly gln gly gly gly thr gly gly pro pro leu pro gly gln ala gly met
 361/121 391/131
 gcc gcc gcc ggt gcc gcc ggt gcc ctg atc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 gly ala ala gly gly ala gly gly leu ile gly aen gly gly ala gly gly asp gly gly
 421/141 451/151
 gtc gcc gcc tcc gcc ggg gtc gcc gga gta gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 val gly ala ser gly gly val ala gly val gly gly ala gly gly aen ala met leu ile
 481/161 511/171
 ggg ccc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 gly his gly gly ala gly gly ala gly gly asp ser ser phe ala aen gly ala ala gly
 541/181 571/191
 gcc gcc gcc ggt gcc gga ggg ccc ctc ctc gcc aat gcc ggg tcc gcc gcc ccc gcc gga
 gly ala gly gly ala gly gly his leu phe gly aen gly gly ser gly gly his gly gly
 601/201 631/211
 gcc gtc acc gcc gcc aac acc ggt atc ggt gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 ala val thr ala gly aen thr gly ile gly gly ala gly gly val gly gly asp ala arg
 661/221 691/231
 ctg atc gcc ccc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc gcc
 leu ile gly his gly gly ala gly gly ala gly gly asp arg ala gly ala leu val gly
 721/241 751/251
 cgt gcc gcc ggg ccc ggt ggg aac ggg gcc gct gcc gcc cag cca tac gcc aac gcc gcc
 arg asp gly gly pro gly gly aen gly gly ala gly gly gly gln leu tyr gly aen gly gly
 781/261 811/271
 gcc gcc gcc ccc gcc acc gcc gga cca ctg cag gcc gcc gtc gcc gcc gga tgg gtc acc gct
 asp gly ala pro gly thr gly gly thr leu gln ala ala val ser gly leu val thr ala
 841/281 871/291
 ttg ttc ggt gca ccc gcc cca ccc gcc gcc acc gcc cca ccc gcc tag ccc cga cca acc
 leu phe gly ala pro gly gln pro gly asp thr gly gln pro gly AMB pro arg ser thr
 901/301 931/311
 agg gtt tag gtc ccc gtc cgg gcc atg gcc atc cgc tga gct gcc gat ctg gcc tac gtt
 arg val ser val pro val arg gly met ala ile arg OPA ala gly asp leu asp tyr val
 961/321 991/331
 ggt gta gaa asa tcc tgc cgc ccc gcc cct taa gcc tgg gcc aat ttc tga tag cta ccc
 gly val glu lys ser cys arg pro asp pro OCH gly trp asp aen phe OPA AMB leu pro
 1021/341 1051/351
 cga ccc agg agg tta cgg gat gag cca ttc gcc ccc ccc ctc act cag gtc gtc atg gtt
 arg his arg arg leu arg asp glu gln phe ala pro pro leu thr gln val val met val
 1081/361 1111/371
 gct gag cgt gct gcc tgc cgt cgg gct gcc cct gcc ccc gcc gcc gcc gcc gcc gcc gcc
 ala glu arg ala gly cys arg arg ala gly pro gly his gly ala gly pro gly gly pro
 1141/381
 gcc gcc ctt gtc gca gga ccc gtt
 ala gly leu val ala gly pro val

SEQ ID N° 50C

FIGURE 50C
 FEUILLE DE REMPLACEMENT (REGLE 26)

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Séquence codante Rv0125 prédite par Cole et al., 1998 (Nature 393:537-544) et contenant seq50A:

```

1/1                               31/11
atg agc aat tgg cgc cgc cgc tca stc agg tgg tca tgg ttg ctg agc gtg ctg gct gcc
Met ser asn ser arg arg arg ser leu arg trp ser trp leu leu ser val leu ala ala
61/21                               91/31
gtc ggg ctg ggc ctg gcc acg gag cag gcc cag gag gcc ccg ccg gcc ttg tgg cag gac
val gly leu gly leu ala thr ala pro ala gln ala ala pro pro ala leu ser gln asp
121/41                               151/51
cgg ttc gcc gac ttc ccc gag ctg ccc stc gac ccg tcc gag atg gtc gcc cca gtg ggg
arg phe ala asp phe pro ala leu pro leu asp pro ser ala met val ala gln val gly
181/61                               211/71
cca cag gtg gtc aac atc aac acc aaa ctg gcc tac aac aac gcc gtg ggc gcc ggg acc
pro gln val val asn ile asn thr lys leu gly tyr asn asn ala val gly ala gly thr
241/91                               271/91
ggc atc gtc atc gat ccc aac ggt gtc gtg ctg acc aac aac cac gtg atc gag ggc gcc
gly ile val ile asp pro asn gly val val leu thr asn asn his val ile ala gly ala
301/101                               331/111
acc gac atc aat gag ttc agc gtc gcc tcc ggc caa acc tac gcc gtc gat gtg gtc ggg
thr asp ile asn ala phe ser val gly ser gly gln thr tyr gly val asp val val gly
361/121                               391/131
tat gac cgc acc cag gat gtc gag gtg ctg cag ctg ccg ggt gcc ggt ggc ctg ccg tgg
tyr asp arg thr gln asp val ala val leu gln leu arg gly ala gly gly leu pro ser
421/141                               451/151
gag gag atc ggt ggc ggc gtc gag gtt ggt gag ccc gtc gtc gag atg ggc aac agc ggt
ala ala ile gly gly gly val ala val gly glu pro val val ala met gly asn ser gly
481/161                               511/171
ggg cag ggc gga acg ccc cgt gag gtg cct ggc agg gtg gtc gag ctg ggc caa acc gtg
gly gln gly gly thr pro arg ala val pro gly arg val val ala leu gly gln thr val
541/181                               571/191
cag gag tgg gat tgg ctg acc ggt gcc gaa gag aca ttg aac ggg ttg atc cag ttc gat
gln ala ser asp ser leu thr gly ala glu glu thr leu asn gly leu ile gln phe asp
601/201                               631/211
gcc gag atc cag ccc ggt gat tgg ggc ggg ccc gtc gtc aac ggc cta gga cag gtg gtc
ala ala ile gln pro gly asp ser gly gly pro val val asn gly leu gly gln val val
661/221                               691/231
ggc atg aac acg gcc gag tcc gat aac ttc cag ctg tcc cag ggt ggg cag gga ttc gcc
gly met asp thr ala ala ser asp asn phe gln leu ser gln gly gly gln gly phe ala
721/241                               751/251
att cag atc ggg cag gag atg gag atc gag ggc cag atc cga tgg ggt ggg ggg tca ccc
ile pro ile gly gln ala met ala ile ala gly gln ile arg ser gly gly gly ser pro
781/261                               811/271
acc gtt cat atc ggg cct acc gcc ttc ctg ggc ttg ggt gtt gtc gac aac aac ggc aac
thr val his ile gly pro thr ala phe leu gly leu gly val val asp asn asn gly asn
841/281                               871/291
ggc gca cga gtc caa cgc gtg gtc ggg agc gct ccg gag gca agt ctg ggc atc tcc acc
gly ala arg val gln arg val val gly ser ala pro ala ala ser leu gly ile ser thr
901/301                               931/311
ggc gac gtg atc acc gag gtc gac ggc gct ccg atc aac tgg gcc acc gag arg gag gac
gly asp val ile thr ala val asp gly ala pro ile asn ser ala thr ala met ala asp
961/321                               991/331
ggc ctt aac ggg cat cat ccc ggt gac gtc atc tgg gtg acc tgg caa acc aag tgg ggc
ala leu asn gly his his pro gly asp val ile ser val thr trp gln thr lys ser gly
1021/341                               1051/351
ggc acg cgt aca ggg aac gtg aca ttg gcc gag gga ccc ccg gcc tga
gly thr arg thr gly asn val thr leu ala glu gly pro pro ala CFA

```

SEQ ID N° 50D

FEUILLE DE REMPLACEMENT (REGLE 26)

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ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv0125:

```

1/1                                     31/11
tag aaa aat cct gcc gcc cgg acc ctt aag gct ggg aca att tct gat agc tac ccc gac
AAG lys aan pro ala ala arg thr leu lys ala gly thr ile ser asp ser tyr pro asp
61/21                                     91/31
aca gga ggt tac ggg atg agc aat tgg cgc cgc cgc tca ctc agg tgg tca tgg ttg ctg
thr gly gly tyr gly met ser asn ser arg arg arg ser leu arg trp ser trp leu leu
121/41                                     151/51
agg gtg ctg gct gcc gtc ggg ctg gcc ctg gcc acc gcc cgg gcc cag gcc gcc ccg ccg
ser val leu ala ala val gly leu gly leu ala thr ala pro ala gln ala ala pro pro
181/61                                     211/71
gcc ttg tgg cag gcc cgg ttc gcc gac ttc ccc gcc ctg ccc ctc gac ccg tcc gcc atg
ala leu ser gln asp arg phe ala asp phe pro ala leu pro leu asp pro ser ala met
241/81                                     271/91
gtc gcc caa gtg ggg cca cag gtg gtc aac atc aac acc aaa ctg ggc tac aac aac gcc
val ala gln val gly pro gln val val asn ile asn thr lys leu gly tyr asn asn ala
301/101                                    331/111
gtg gcc gcc ggg acc gcc atc gtc atc gat ccc aac ggt gtc gtg ctg acc aac aac cac
val gly ala gly thr gly ile val ile asp pro asn gly val val leu thr asn asn his
361/121                                    391/131
gtg atc gcc gcc gcc acc gcc atc aat gcc ttc agc gcc ggc tcc ggc caa acc tac gcc
val ile ala gly ala thr asp ile asn ala phe ser val gly ser gly gln thr tyr gly
421/141                                    451/151
gtc gat gtg gtc ggg tat gac cgc acc cag gat gtc gcc gtg ctg cag ctg cgc ggt gcc
val asp val val gly tyr asp arg thr gln asp val ala val leu gln leu arg gly ala
481/161                                    511/171
ggt gcc ctg ccg tgg gcc gcc atc ggt gcc gcc gtc gcc gtt ggt gag ccc gtc gtc gcc
gly gly leu pro ser ala ala ile gly gly gly val ala val gly gln pro val val ala
541/181                                    571/191
atg gcc aac agc ggt ggg cag gcc gga acc ccc cgt gcc gtg cct gcc agg gtg gtc gcc
met gly asn ser gly gly gln gly gly thr pro arg ala val pro gly arg val val ala
601/201                                    631/211
ctc gcc caa acc gtg cag gcc tgg gat tgg ctg acc ggt gcc gaa gag aca ttg aac ggg
leu gly gln thr val gln ala ser asp ser leu thr gly ala gln gln thr leu asn gly
661/221                                    691/231
ttg atc cag ttc gat gcc gcc atc cag ccc ggt gat tgg gcc ggg ccg gtc gtc aac gcc
leu ile gln phe asp ala ala ile gln pro gly asp ser gly gly pro val val asn gly
721/241                                    751/251
cta gga cag gtg gtc ggt atg aac acc gcc gcc tcc gat aac ttc cag ctg tcc cag ggt
leu gly gln val val gly met asn thr ala ala ser asp asn phe gln leu ser gln gly
781/261                                    811/271
ggg cag gga ttc gcc att ccg atc ggg cag gcc atg gcc atc gcc gcc cag atc cga tgg
gly gln gly phe ala ile pro ile gly gln ala met ala ile ala gly gln ile arg ser
841/281                                    871/291
ggt ggg ggg tca ccc acc gtt cat atc ggg cct acc gcc ttc ctc gcc ttg ggt gtt gtc
gly gly gly ser pro thr val his ile gly pro thr ala phe leu gly leu gly val val
901/301                                    931/311
gac aac aac gcc aac gcc gca cga gtc caa cgc gtg gtc ggg agc gct ccg gcc gca agt
asp asn asn gly asn gly ala arg val gln arg val val gly ser ala pro ala ala ser
961/321                                    991/331
ctc gcc atc tcc acc gcc gac gtg atc acc gcc gtc gac gcc gct ccg atc aac tgg gcc
leu gly ile ser thr gly asp val ile thr ala val asp gly ala pro ile asn ser ala
1021/341                                    1051/351
acc gcc atg gcc gac gcc ctt aac ggg cat cat ccc ggt gac gtc atc tgg gtg acc tgg
thr ala met ala asp ala leu asn gly his his pro gly asp val ile ser val thr trp
1081/361                                    1111/371
caa acc aag tgg gcc gcc acc cgt aca ggg aac gtg aca tgg gcc gcc gga ccc ccg gcc
gln thr lys ser gly gly thr arg thr gly asn val thr leu ala gln gly pro pro ala
1141/381
tga
OBA

```

SEQ ID N° 50F

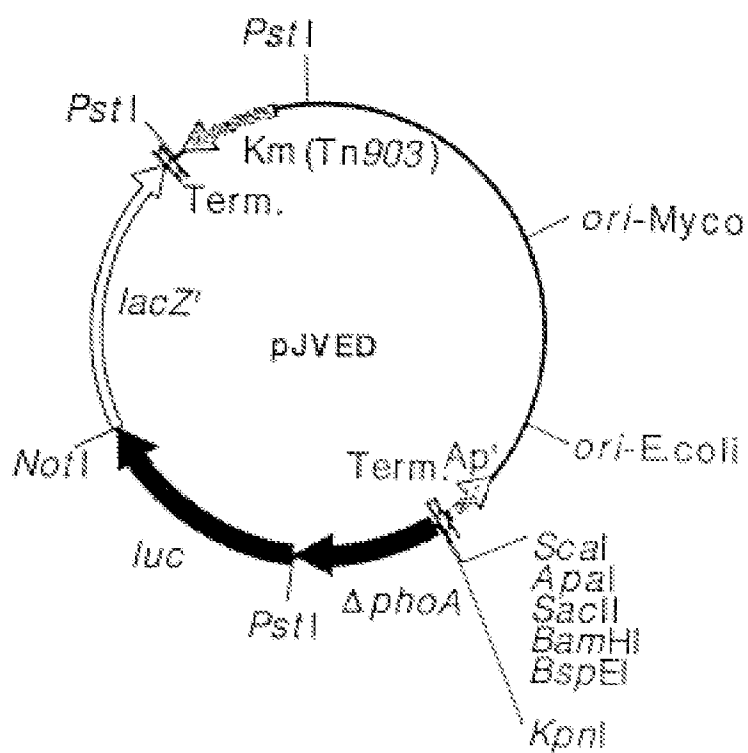


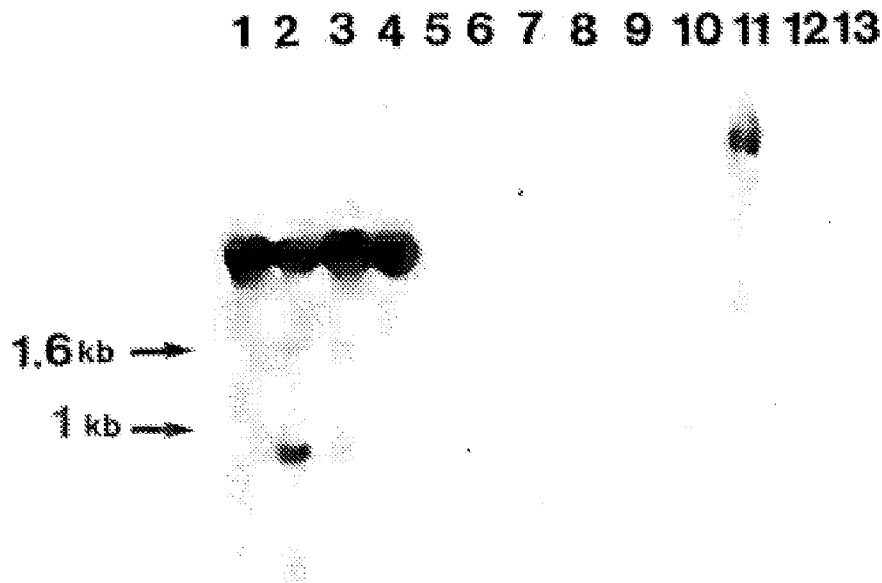
FIGURE 51A



FIGURE 51B

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Expériences d'hybridation moléculaire d'une sonde spécifique
du DP428 sur l'ADN génomique de différentes espèces de
mycobactéries



1: *M. tuberculosis* 2: *M. bovis* 3: BCG 4: *M. africanum* 5: cancelled 6: *M. fortuitum* 7: *M. simiae* 8: *M. avium* 9: *M. chelonae* 10: *M. flavescens* 11: *M. goodii* 12: *M. marinum* 13: *M. kansasii*

FIGURE 52
FEUILLE DE REMPLACEMENT (REGLE 26)

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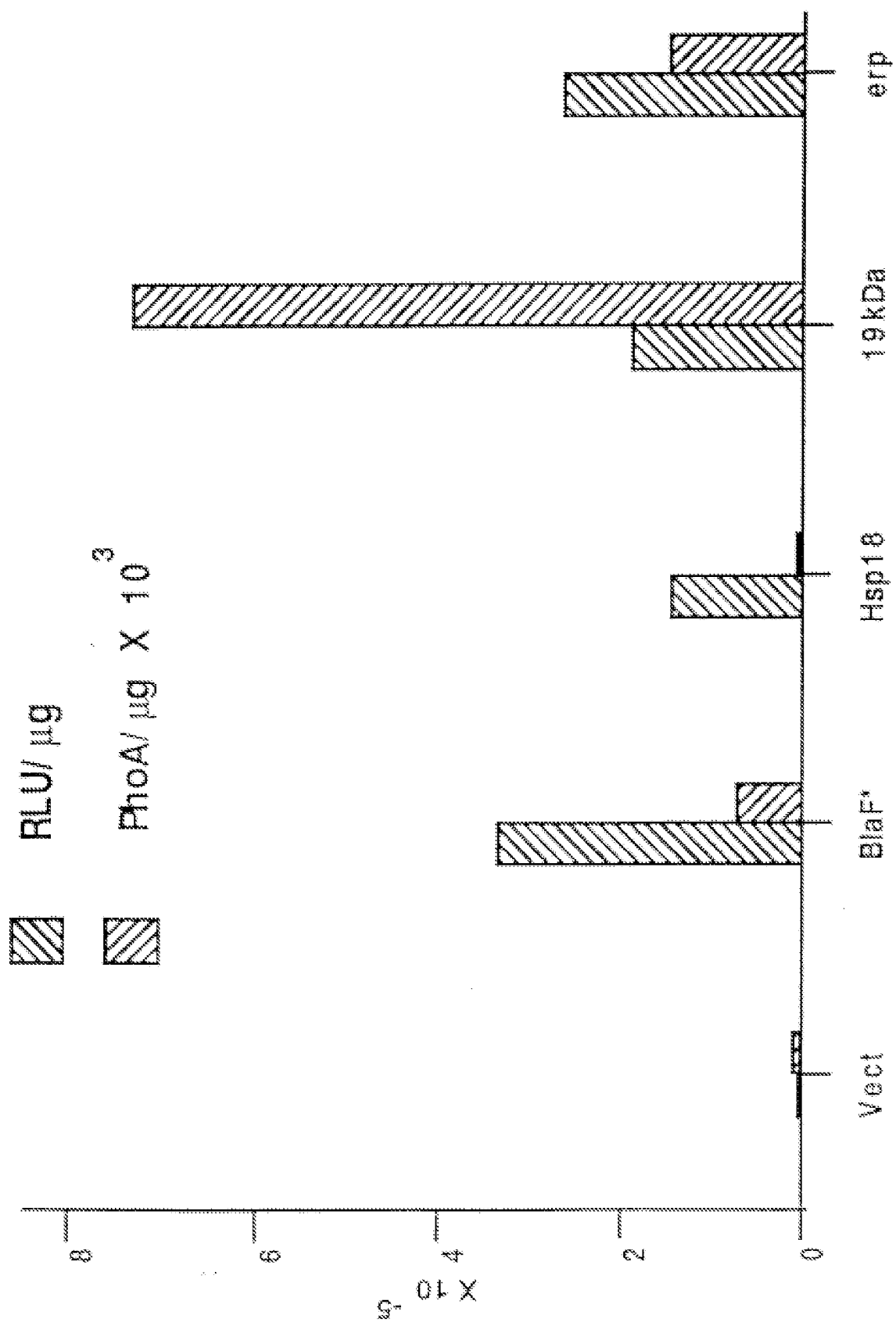


FIGURE 53

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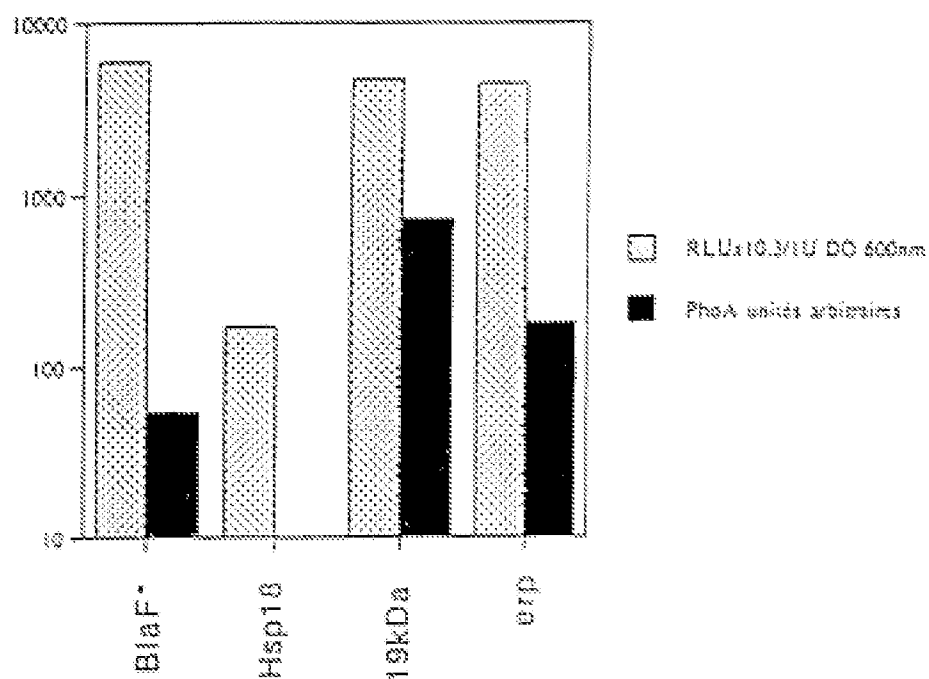
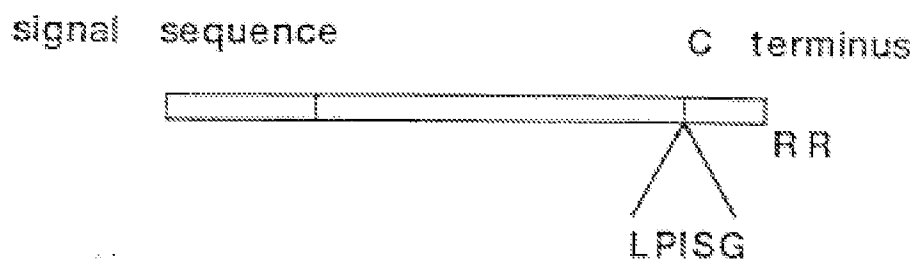
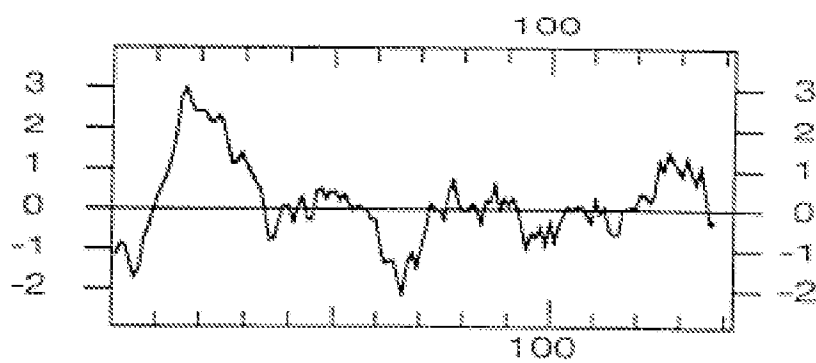


FIGURE 54



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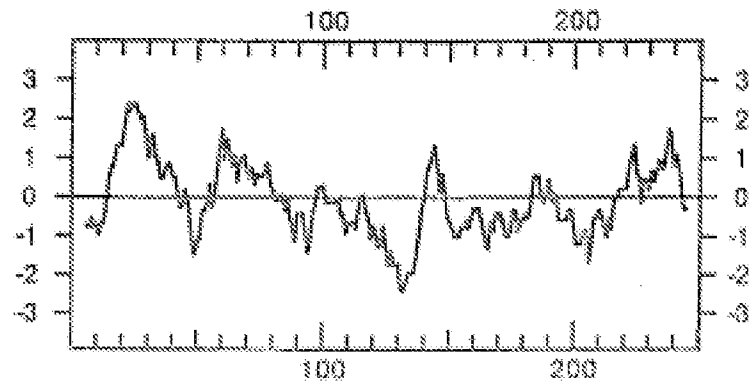


FIGURE 56

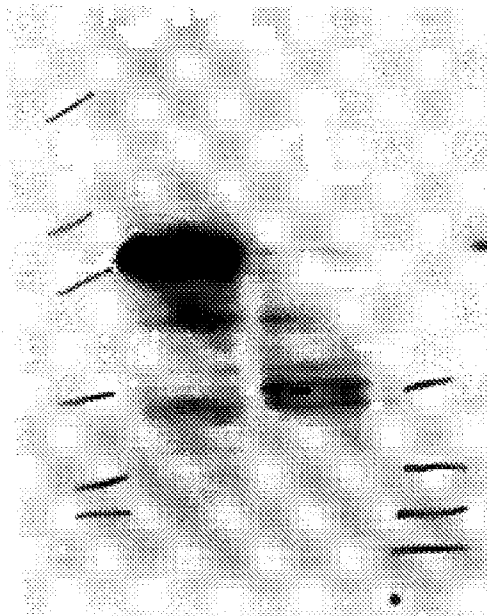


FIGURE 57A



FIGURE 57B